

### **PART V**

**City of Bend Standard Drawings** 



### Part V – City of Bend Standard Drawings

### **Table of Contents**

ROADWAY	R
Typical Street Cross-Sections – General Notes	
Typical Street Cross-Sections – Arterial	R-1A
Typical Street Cross-Sections – Major Collector	R-1B
Typical Street Cross-Sections – Minor Collector	R-1C
Typical Street Cross-Sections – Local	R-1D
Typical Street Cross-Sections – Industrial Local	R-1E
Typical Street Section – Alley	R-1F
Typical Street Dead-End Turnaround	R-1G
Clear Vision Areas at Intersections	R-2
Concrete Curb	R-3
Concrete Curb Notes	R-3A
Shared-Use Path/Sidewalk, Setback	R-4A
Shared-Use Path/Sidewalk, Curb-Tight	R-4B
Driveway Approach, Setback (Standard)	R-5A
Driveway Approach, Setback, Partially Lowered (Alternate B)	R-5B
Driveway Approach, Curb-Tight, Fully Lowered (Alternate C)	R-5C
Driveway Approach, Curb-Tight, Partially Lowered (Alternate D)	R-5D
Driveway Approach, Curb-Tight, Wrapping Sidewalk (Alternate E)	R-5E
Curb Ramp General Notes	R-6
Typical Perpendicular Curb Ramp	R-6A
Typical Parallel Curb Ramp	R-6B
Curb Ramp Details	R-6C
PSST Anchor Base Foundation	R-7
PSST Slip Base Foundation	R-7A
Removal Post and Markings	R-7B
Standard Street Name Signs	R-8
Standard Street Sign Placement	R-9
Typical Trench Section	R-10
Franchise Utility Joint Trench	R-10A
Trench Surface Restoration	R-11



Patterned Colored Concrete Detail	R-24
Median End Detail	R-25
Local Street Curb Extensions	R-26
Collector / Local Intersection	R-27
Accessible Parking – Angle	R-29
Speed Humps and Sharrow Placement	R-32
Raised Crosswalk	R-33
Traffic Circle	R-34
Rectangular Rapid Flashing Beacon	R-35
Pavement Markings – White	R-40
Pavement Markings – Yellow	R-41
Pavement Markings	R-42A
Pavement Markings	R-42B
Pavement Markings - Bike	R-43
Pavement Markings - Bike	R-43A
Turn Lane Marking Layout	R-44
Intersection Bike Safety	R-44A
Bike Lane Markings	R-44B
Bike Lane Markings	R-44C
Intersection Pavement Marking Layout	R-45
Crosswalk Markings	R-47
Primary Trail	R-48
Connector Trail	R-49
SANITARY	S
Sewer Main Typical Profile	S-1
Gravity Sewer/Storm Services on New Mains	S-2A
Gravity Sewer/Storm Service Connection to Existing Main	S-2B
Gravity Sewer/Storm Cleanout	S-2C
Standard Sewer Manhole Ring & Cover	S-3A
Composite Manhole Frame and Cover	S-3B
Standard Sewer/Storm Manhole	S-3C
Typical Manhole Invert Layout	S-3D
Standard Outside Drop - Larger Than 12" Pipe	S-4
Standard Inside Drop – 12" Pipe and Smaller	S-4A
3" & 4" Pressure Sewer Line Termination Cleanout	S-5



Air Release/Vac Breaker Pressure Sewer MH	S-6
Main Line Cleanout Pressure Sewer	S-7
Pressure Sewer Service – Traffic Area	S-8
Pressure Sewer Service – Non Traffic Area	S-9
Industrial and Commercial Services Sampling MH	S-15
Vacuum Sewer Service	S-16
WATER	W
Water Main Typical Profile	
Residential Water Service Installation	
3/4"-1" Residential Meter Service Installation	
3/4"-1" Residential Meter Service Installation	
Commercial & IRR Meter Service Installation	W-5
1" Commercial & IRR Meter Service Installation	W-5A
1 1/2" & 2" Commercial and Irrigation Meter Service Installation	W-5B
3" & 4" Commercial Meter Installation	W-5C
6" and Larger Commercial Meter Installation	W-5D
Meter Installation in Sidewalks	W-5E
Galv. Ladder w/ Alum Ext For Water Vaults	W-6
Typical Hydrant	W-7
Hydrant Location and Clear Zone	W-8
Separation of Water Line to Irrigation Culverts	W-9
1" & 2" Standard Air Release Valve – Traffic Area	W-10
1" Standard Air Release Valve	W-10A
2" Standard Air Release Valve	W-10B
Typical DCVA Installations 2" and Smaller	W-13
2" & Larger Double Check Valve Assembly	W-13A
Fire Sprinkler Line	W-13B
2 1/2"-10" Reduced Pressure Backflow Assembly	W-15
1"-2" Reduced Pressure Backflow Assembly	W-15A
2 1/2" + Reduced Pressure Backflow Assembly	W-15B
Fire Gate	W-21
Hydrant Permit/Filling Tanker Truck	W-22
Standard 2" Blow-Off Assembly	
4" Blow-Off Detail	W-24
Standard Water Sampling Station	



Cross Connection Detail	W-29
Valve Box and Operator Extension Assembly	W-30
STORMWATER	STRM
Vegetated Swale Detail	STRM-2
Typical Swale Layout	
Typical Curb Cut	
Check Dam Detail	STRM-4
Stormwater Planter Detail	STRM-5
Stormwater Filter Detail	STRM-6
Stormwater Sedimentation Manhole	STRM-7
Stormwater Sedimentation Manhole – Alternate	STRM-7 <i>A</i>
Stormwater Manhole Lid Detail	STRM-8
Standard Catch Basin Special Inlets	STRM-9
Standard Pre-Cast Drywell	STRM-10
Drywell w/ Manufactured Treatment Layout	STRM-11
Standard Catch Basin	STRM-12
Stormwater Grate	STRM-13A
Combination Catch Basin Inlet	STRM-13E
Existing Catch Basin Pavement Resurfacing	STRM-14
Infiltration Pond Detail	STRM-16
Chainlink Fence Detail	STRM-17
Curb Weep Hole Detail	STRM-18
EROSION CONTROL	<u>E</u>
Sediment Fence Detail	E-1
Bio-Filter Bag Inlet Protection	E-2A
Filter Insert Inlet Protection	E-2E
Tree/Vegetation Protection Fencing	E-3
Straw Wattle	E-4
Slope / Stockpile Stabilization	E-5
Erosion Blanket – Channel Installation	E-6
Concrete Truck Washout	
Gravel Construction Entrance	F-8



### LANDSCAPING Planting or Turf Bed Drip Layout .....L-1 Sprinkler Head and Joint ......L-2 Irrigation Sleeve Under Paving.....L-3 Irrigation – Typical Trench.....L-4 Irrigation Fittings......L-5 Irrigation Remote Control Valve ......L-6 Irrigation Blow Out......L-7 Termination Point ......L-8 Quick Coupling Valve.....L-9 Drip Control Valve, Filter, and Regulator ......L-10 1" Comm. Control Zone Kit with Basket Filter.....L-12 Air Relief Valve in Kit – AR Valve Kit ......L-13 Drip Irrigation Mainline Layout.....L-14 Point Source Drip Emitter ......L-15 Dripline 2" Below Grade Potable System.....L-16 Landscape Dripline Flush Point Potable System ......L-17 Tree Root Watering System Detail .....L-18 Tree Well Detail.....L-19



# CITY OF BEND STANDARD DRAWINGS Roadway (R)



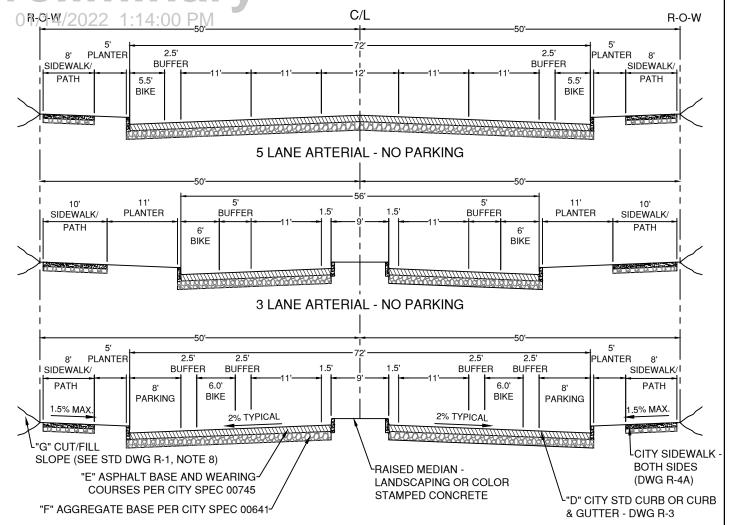
GENERAL NOTES FOR STD DWGS R-1A THROUGH 1.-1F:

- 1. CENTER STREETS IN THE RIGHT-OF-WAY UNLESS OTHERWISE APPROVED BY CITY ENGINEER FOR UNIQUE TRANSITIONS OR SITE CONSTRAINTS.
- 2. THE LEVEL OF TRAFFIC STRESS PER THE ODOT APM CH. 14 IS SHOWN ON EACH STANDARD CROSS-SECTION. ANY MODIFICATION OF THE CROSS-SECTIONS MUST PROVIDE THE APPROPRIATE LTS.
- 3. INSTALL SIDEWALKS/SHARED-USE PATHS PROPERTY TIGHT. SIDEWALKS/SHARE-USE PATHS MAY MEANDER AROUND UTILITIES, TREES, AND OTHER NON-MOVEABLE OBJECTS. EASEMENTS ARE REQUIRED WHERE SIDEWALK/SHARED-USE PATH MEANDERS OUT OF THE RIGHT-OF-WAY.
- 4. PAVEMENT SECTIONS FOR STREETS AND SIDEWALKS PER THE THICKNESSES NOTED IN TABLE BELOW OR AS SPECIFIED IN A STAMPED GEOTECHNICAL REPORT APPROVED BY THE CITY ENGINEER.
- 5. RETAINING WALLS AND STAIRS ARE NOT PERMITTED WITHIN THE RIGHT-OF-WAY UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
- 6. STREET CROSS-SECTION/IMPROVEMENT STANDARDS ARE BASED ON STREET CLASSIFICATION. REFERENCE THE BEND DEVELOPMENT CODE SECTION 3.4 PUBLIC IMPROVEMENTS STANDARDS AND STANDARD CROSS-SECTIONS FOR ADDITIONAL DETAIL.
- 7. THE CROSS-SLOPE OF THE PLANTER STRIP BETWEEN THE CURB AND RIGHT-OF-WAY SHALL NOT BE STEEPER THAN 4H:1V TO PROVIDE A RECOVERABLE ROADSIDE SLOPE. 50H:1V (2%) IS TYPICAL/PREFERRED.
- 8. MAX 1.5H:1V CUT SLOPES PERMITTED IN ROCK CUTS WHEN APPROVED BY A GEOTECHNICAL ENGINEER.
- 9. MASTER PLAN DEVELOPMENTS PER BEND DEVELOPMENT CODE 4.5.100(E)(2)(C) MAY PROPOSE MODIFIED STREET SECTIONS THAT INCLUDE ADDITIONS TO OR ENHANCEMENTS OF THE BASIC MINIMUM STANDARD SECTIONS SHOWN HERE. ANY ALTERNATE SECTIONS MUST PROVIDE FOR THE MINIMUM ELEMENT WIDTHS SHOWN IN THE CROSS-SECTIONS.
- 10. OFF STREET SHARED-USE PATHS (PATHS MEETING THE GENERAL ALIGNMENT OF THE TSP LOW STRESS NETWORK AND ARE MORE THAN 30 FT OUTSIDE OF THE RIGHT-OF-WAY) ARE ENCOURAGED, PARTICULARLY ALONG ARTERIAL STREET CORRIDORS. SIDEWALKS MAY BE REDUCED TO A MINIMUM 6 FT OR ELIMINATED WHEN THE SAME SIDE OF THE ROAD CORRIDOR IS SERVED BY A SHARED-USE PATH DEPENDING ON ADJACENT LAND USE AND PEDESTRIAN/BIKE ACCESS AND WITH CITY ENGINEER APPROVAL.
- 11. TWELVE-FOOT CENTER MEDIAN ON ARTERIAL AND COLLECTOR CROSS-SECTIONS INCLUDES EITHER A STRIPED MEDIAN (TWO-WAY LEFT TURN LANE, DOUBLE YELLOW, AND/OR TURN BAY) OR A NINE-FOOT RAISED REFUGE ISLAND WITH A ONE AND A HALF FOOT SHY LINE STRIPE EACH SIDE AS REQUIRED PER STANDARDS.
- 12. RAISED MEDIANS ARE AT THE CITY ENGINEER'S DISCRETION ON ARTERIALS & COLLECTORS, MEDIAN REFUGE ISLANDS FOR STREET CROSSINGS ON A LOW STRESS ROUTE OR AN ENHANCED CROSSING ON A CONNECTOR ROUTE DO NOT REQUIRE CITY ENGINEER APPROVAL.
- 13. ON-STREET PARKING SPACES ARE NOT STRIPED. IN HIGH PARKING DEMAND AREAS, A PARKING LINE MAY BE USED WITH CITY ENGINEER APPROVAL.
- 14. SEE BEND DEVELOPMENT CODE 3.4.200(F)(3) FOR STREETS AND INTERSECTIONS NOT IDENTIFIED FOR TRAVEL LANE EXPANSION WHERE ADDITIONAL RIGHT-OF-WAY IS NOT REQUIRED FOR VEHICLE TRAVEL LANES.
- 15.PLTS = PEDESTRIAN LEVEL OF TRAFFIC STRESS / BLTS = BICYCLISTS LEVEL OF TRAFFIC STRESS.
- 16. DEVIATIONS FROM THE PAVEMENT SECTIONS PROVIDED IN THE TABLE BELOW REQUIRE A STAMPED GEOTECHNICAL REPORT. PCC ROADWAYS REQUIRE A STAMPED GEOTECHNICAL REPORT.
- 17. SEE CITY SPEC 00744/00745 FOR MAXIMUM AC PAVEMENT LIFT THICKNESS.
- 18. WHERE EXISTING GROUND CROSS SLOPE EXCEEDS 12%, CURB-TIGHT SIDEWALK IS ALLOWED PER DESIGN STANDARD 3.4.7 HILLSIDE.

STREET TYPE	"A" ROW	"B" STREET	"C" SIDEWALK	"D" CURB	"E" ACP DEPTH/LEVEL	"F" BASE	"G" CUT/FILL
ARTERIAL		PER R-1	A	7"/16"	8" - LEVEL IV	10"	4H:1V
COLLECTOR	F	PER R-1B & R-1C			6" - LEVEL III	8"	4H:1V
LOCAL	PER R-1D PER R-1D			6"/12"	4" - LEVEL III	6"	2H:1V
INDUSTRIAL LOCAL				6"/12"	4" - LEVEL III	8"	2H:1V
ALLEY		PER R-1	E		4" - LEVEL III	6"	2H:1V
ROUNDABOUT - ACP	VARIES	VARIES	VARIES	**	8" - LEVEL IV	10"	4H:1V
ROUDABOUT - PCC ***	VARIES	VARIES	VARIES	**	*	*	4H:1V

- \* THE STANDARD PAVEMENT SECTION FOR ARTERIAL STREETS IS ASPHALT. FOR RECONSTRUCTION, NEW STREETS MORE THAN 1/4 MILE LONG, AND FOR ROUNDABOUTS, A LIFE CYCLE COST ANALYSIS EVALUATING ASPHALT, PERPETUAL PAVEMENT, CONCRETE, AND OTHER SECTIONS SHALL BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.
- \* CURBS AT ROUNDABOUTS AND ON SPLITTER ISLANDS SHALL BE HIGH-STRENGTH PER CITY SPEC 00759.13.
- \*\*\* DOWELING REQUIRED AT ROUNDABOUT JOINTS

DR	WN AJD ROADWAY	(50)	CITY OF BEND	SCALE NTS
RE	1	(8111))	STANDARD DRAWING	DATE 12/10/21
			710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	TYPICAL STREET CROSS-SECTIONS - GENERAL NOTES	STD DWG R-1



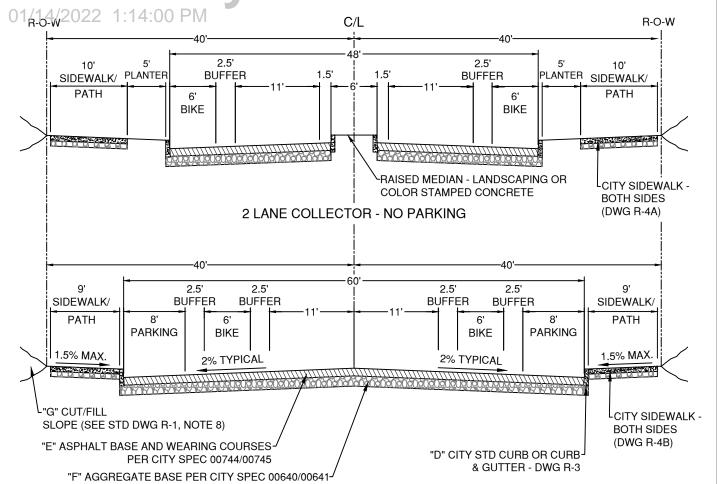
#### 3 LANE ARTERIAL - PARKING BOTH SIDES

PLTS:  $1 \le 35$  MPH BLTS:  $1 \le 30$  MPH  $2 \ge 40$  MPH (SUP) BLTS:  $1 \le 30$  MPH  $3 \ge 40$  MPH

#### ARTERIAL GENERAL NOTES:

- 1. SEE R-1 FOR GENERAL NOTES.
- 2. WHERE PERMITTED BY THE BEND DEVELOPMENT CODE, ON-STREET PARKING MAY BE PROVIDED ON ARTERIAL STREETS WITH SPEEDS 35 MPH OR LESS. ON-STREET PARKING DESIGN PER ENGINEERING STANDARDS.
- 3. PROTECTED BIKE LANES, OTHER THAN PARKING PROTECTED, REQUIRE CITY ENGINEER APPROVAL. PARKING PROTECTED BIKE LANES ALLOWED ON A CASE-BY-CASE BASIS.
- 4. SIDEWALK MAY MEANDER WITH A MINIMUM 5 FT PLANTER STRIP. DESIGN MEANDERING CURVES FOR 10 MPH.
- 5. FOR EXISTING ARTERIAL SECTIONS IN 100 FT RIGHT-OF-WAY WITH 52 FT PAVEMENT WIDTHS, THE CITY ENGINEER MAY APPROVE REDUCING THE BIKE LANE TO 6/2.5 FT TO MATCH THE 52 FT CURB-TO-CURB EXISTING CONSTRUCTED SECTIONS; EXCEPTION DOES NOT APPLY TO SECTIONS (NEW OR RECONSTRUCTED) AT THE OUTER EXTENTS OF THE NETWORK WHERE UNDEVELOPED LAND AND FUTURE EXPANSIONS/RECONSTRUCTIONS CAN ACCOMMODATE THE 56/72 FT PAVEMENT SECTION.
- 6. THE FIVE-LANE ARTERIAL SECTION IS TO BE USED ON 3RD STREET, 27TH STREET SOUTH OF NEFF ROAD, REED MARKET ROAD EAST OF US 97, AND OTHER MAJOR ARTERIAL STREETS AS IDENTIFIED BY A TRAFFIC ANALYSIS WITH CITY ENGINEER APPROVAL (SEE STANDARDS FOR LANE ADDITIONS).
- 7. PARKING IS NOT PERMITTED ON A FIVE LANE ARTERIAL
- 8. FOR PARKING ON ONE SIDE OF A THREE LANE ARTERIAL, COMBINE THE APPLICABLE HALF STREET SECTIONS FROM THE NO PARKING AND PARKING ON BOTH SIDES TYPICAL SECTIONS. THE ROAD CENTERLINE SHALL REMAIN IN THE CENTER OF ROW TO ALLOW FOR FUTURE EXPANSION.

	N AJD ROADWAY		CITY OF BEND	SCALE NTS
-	DATE	<b>410)</b>	STANDARD DRAWING	DATE 12/10/21
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	CITY	OF BEND	TYPICAL STREET CROSS-SECTIONS - ARTERIAL	STD DWG R-1A



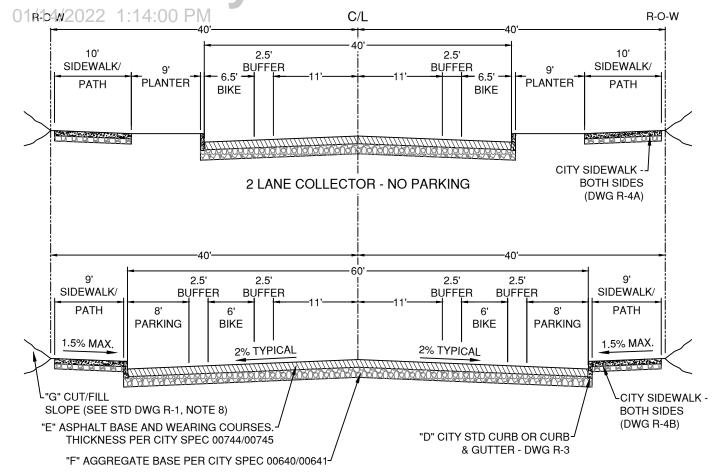
#### 2 LANE COLLECTOR - PARKING BOTH SIDES

PLTS:  $1 \le 35$  MPH BLTS:  $1 \le 30$  MPH  $2 \ge 40$  MPH (SUP) (BIKE LANE) 2 = 35 MPH  $3 \ge 40$  MPH

#### MAJOR COLLECTOR GENERAL NOTES:

- 1. SEE R-1 FOR GENERAL NOTES.
- 2. WHERE PERMITTED BY THE BEND DEVELOPMENT CODE, ON-STREET PARKING MAY BE PROVIDED ON COLLECTOR STREETS WITH SPEEDS 35 MPH OR LESS. ON-STREET PARKING DESIGN PER ENGINEERING STANDARDS.
- 3. WHERE THE CROSS-SECTION DOES NOT PROVIDE FOR TREES IN A PLANTER STRIP, DEVELOPMENT MUST STILL MEET BEND DEVELOPMENT CODE TREE REQUIREMENTS IN AN ALTERNATE LOCATION ON-SITE OR PROVIDE MITIGATION AND RECEIVE APPROVAL OF A VARIANCE AS REQUIRED BY CODE.
- 4. PROTECTED BIKE LANES, OTHER THAN PARKING PROTECTED, REQUIRE CITY ENGINEER APPROVAL. PARKING PROTECTED BIKE LANES ALLOWED ON A CASE-BY-CASE BASIS.
- 5. SIDEWALK MAY MEANDER WITH A MINIMUM 5 FT PLANTER STRIP. DESIGN MEANDERING CURVES FOR 10 MPH.
- 6. PARKING PROTECTED BIKE LANES ALLOWED ON A CASE-BY-CASE BASIS.
- 7. FOR PARKING ON ONE SIDE, COMBINE THE APPLICABLE HALF STREET SECTIONS FROM THE NO PARKING AND PARKING ON BOTH SIDES TYPICAL SECTIONS. THE ROAD CENTERLINE SHALL REMAIN IN THE CENTER OF ROW TO ALLOW FOR FUTURE EXPANSION.

		CITY OF BEND	TYPICAL STREET CROSS-SECTIONS - MAJOR COLLECTOR	STD DWG R-1B
		Cur		APPR
REV	DATE	(GHIV)	710 NW WALL ST., BEND, OREGON 97701	DATE 12/10/21
	ROADWAY		STANDARD DRAWING	
_	WN AJD		CITY OF BEND	SCALE NTS



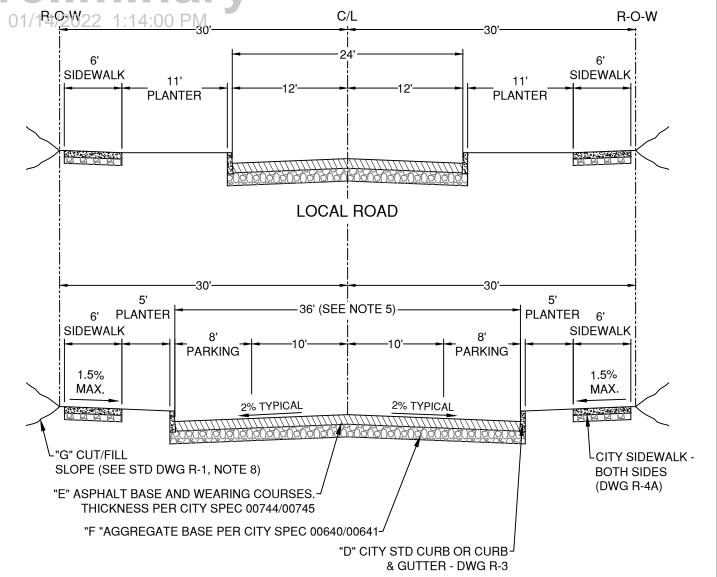
2 LANE COLLECTOR - PARKING BOTH SIDES

PLTS:  $1 \le 35$  MPH BLTS:  $1 \le 30$  MPH  $2 \ge 40$  MPH (SUP) (BIKE LANE) 2 = 35 MPH  $3 \ge 40$  MPH

#### MINOR COLLECTOR GENERAL NOTES:

- 1. SEE R-1 FOR GENERAL NOTES
- 2. WHERE PERMITTED BY THE BEND DEVELOPMENT CODE, ON-STREET PARKING MAY BE PROVIDED ON COLLECTOR STREETS WITH SPEEDS 35 MPH OR LESS. ON-STREET PARKING DESIGN PER ENGINEERING STANDARDS.
- WHERE THE CROSS-SECTION DOES NOT PROVIDE FOR TREES IN A PLANTER STRIP, DEVELOPMENT MUST STILL MEET BEND DEVELOPMENT CODE
  TREE REQUIREMENTS IN AN ALTERNATE LOCATION ON-SITE OR PROVIDE MITIGATION AND RECEIVE APPROVAL OF A VARIANCE AS REQUIRED BY
  CODE.
- 4. PROTECTED BIKE LANES, OTHER THAN PARKING PROTECTED, REQUIRE CITY ENGINEER APPROVAL. PARKING PROTECTED BIKE LANES ALLOWED ON A CASE-BY-CASE BASIS.
- 5. SIDEWALK MAY MEANDER WITH A MINIMUM 5 FT PLANTER STRIP. DESIGN MEANDERING CURVES FOR 10 MPH.
- 6. PARKING ON SIDE ALLOWED BY DROPPING PARKING FROM OTHER SIDE IN BOTTOM SECTION KEEP ROAD CL IN ROW CENTER.
- 7. FOR PARKING ON ONE SIDE, COMBINE THE APPLICABLE HALF STREET SECTIONS FROM THE NO PARKING AND PARKING ON BOTH SIDES TYPICAL SECTIONS. THE ROAD CENTERLINE SHALL REMAIN IN THE CENTER OF ROW TO ALLOW FOR FUTURE EXPANSION.

-		AJD ROADWAY	(CD)	CITY OF BEND	SCALE NTS
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			CITY OF BEND	TYPICAL STREET CROSS-SECTIONS - MINOR COLLECTOR	STD DWG R-1C



#### LOCAL ROAD - PARKING BOTH SIDES

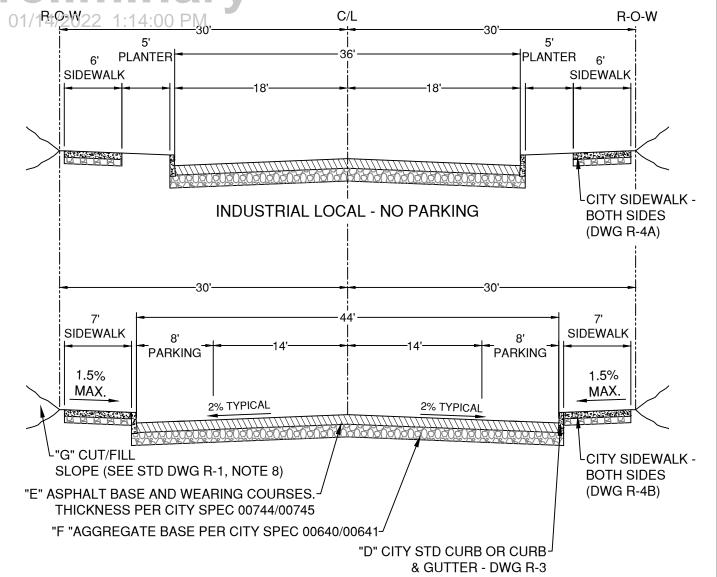
PLTS:1 BLTS:1 2 (STRIPED CENTERLINE)

#### LOCAL ROAD GENERAL NOTES:

- 1. SEE R-1 FOR GENERAL NOTES
- 2. THE SIDE PARKING IS ON MAY ALTERNATE BY BLOCK. PROVIDE PARKING NEXT TO PARKS, SCHOOLS, AND OTHER ACTIVITY GENERATING LAND USES.
- 3. UTILITY EASEMENTS MAY BE REQUIRED FOR PEDESTALS, TRANSFORMERS, ETC.
- 4. 36' LOCAL ROAD ROAD REQUIRES CURB EXTENSIONS AT INTERSECTIONS.
- 5. THE LOCAL ROAD PARKING BOTH SIDES CURB-TO-CURB WIDTH MAY BE REDUCED TO 32' WHERE DRIVEWAYS ARE PRESENT (7' PLANTER STRIPS).
- 6. FOR PARKING ON ONE SIDE, COMBINE THE APPLICABLE HALF STREET SECTIONS FROM THE NO PARKING AND PARKING ON BOTH SIDES TYPICAL SECTIONS. THE ROAD CENTERLINE SHALL REMAIN IN THE CENTER OF ROW TO ALLOW FOR FUTURE EXPANSION.

ŀ		N AJD ROADWAY	(50)	CITY OF BEND	SCALE NTS
Ì	_	DATE	(GHID)		DATE 12/10/21
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		•	CITY OF BEND	TYPICAL STREET CROSS-SECTION - LOCAL	STD DWG R-1D

<u>Preliminary</u>



#### INDUSTRIAL LOCAL - PARKING BOTH SIDES

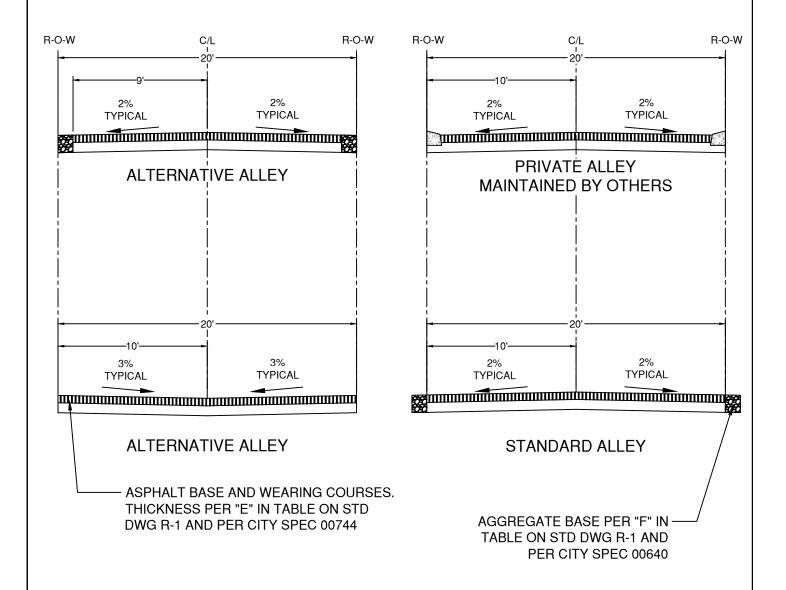
PLTS:1 BLTS:1 2 (STRIPED CENTERLINE)

#### LOCAL ROAD GENERAL NOTES:

- 1. SEE R-1 FOR GENERAL NOTES
- 2. THE SIDE PARKING IS ON MAY ALTERNATE BY BLOCK. PROVIDE PARKING NEXT TO PARKS, SCHOOLS, AND OTHER ACTIVITY GENERATING LAND USES.
- 3. UTILITY EASEMENTS MAY BE REQUIRED FOR PEDESTALS, TRANSFORMERS, ETC.
- 4. FOR PARKING ON ONE SIDE, COMBINE THE APPLICABLE HALF STREET SECTIONS FROM THE NO PARKING AND PARKING ON BOTH SIDES TYPICAL SECTIONS. THE ROAD CENTERLINE SHALL REMAIN IN THE CENTER OF ROW TO ALLOW FOR FUTURE EXPANSION.

		CITY OF BEND	TYPICAL STREET CROSS-SECTION - INDUSTRIAL LOCAL	STD DWG R-1E
		ALII!	710 NW WALL ST., BEND, OREGON 97701	APPR
RE	1	(GHID)	STANDARD DRAWING	DATE 12/10/21
DR.	WN AJD ROADWAY	(CO)	CITY OF BEND	SCALE NTS

01/14/2022 1:14:00 PM



#### ALLEY GENERAL NOTES:

- 1. SEE R-1 FOR GENERAL NOTES.
- 2. NEW ALLEY RIGHT-OF-WAY AND PAVED WIDTH WILL BE 20' WIDE. WHERE ALLEYS ARE INSTALLED IN EXISTING RIGHT-OF-WAY, THE PAVED WIDTH MAY BE UP TO 2 FEET LESS THAN THE RIGHT-OF-WAY WIDTH. 1-FOOT WIDE BUFFERS ON EACH SIDE OF THE ALLEY MAY BE LEFT UNPAVED WHEN ALLEYS ARE INSTALLED IN EXISTING RIGHT-OF-WAY.

D	ROADWAY	(CO)	CITY OF BEND	SCALE NTS
R		(GHID)	STANDARD DRAWING	DATE 12/10/21
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		CITY OF BEND	TYPICAL STREET SECTION - ALLEY	STD DWG R-1F

01/14/2022 1:14:00 PM OPTIONAL CENTER MEDIAN AS APPROVED BY CITY ENGINEER - 60' ROW SEE STD DWG R-1D MIN 20' 25' CURB **RADIUS** MIN 96' Ø -MIN 108' Ø ROW -- 60' -60' -20' 28' R **TYP** - 26' CUL-DE-SAC GENERAL NOTES: 1. SEE R-1 FOR GENERAL NOTES. 2. SEE STD DWG R-1 AND R-1D FOR PAVEMENT AND BASE AGGREGATE DEPTHS ON LOCAL ROADS DRAWN AJD CITY OF BEND SCALE NTS DIV ROADWAY STANDARD DRAWING REV DATE DATE 12/10/21 710 NW WALL ST., BEND, OREGON 97701 APPR CITY OF BEND TYPICAL STREET DEAD-END TURNAROUND STD DWG R-1G

01/14/2022 1:14:00 PM DRIVEWAY 10' 10' (SEE NOTE STREET **DRIVEWAY AND STREET** INTERSECTION (SEE NOTE 5) MAX HEIGHT OF SHRUBS AND MINIMUM LIMBING REQUIRED IN **CLEAR VISION AREA** 15 110 PROPERTY CORNER ALLEY **PROPERTY LINE** SIDEWALK LANDSCAPE BUFFER CLEAR VISION AREA

STREET/STREET INTERSECTION

STREET/ALLEY INTERSECTION

STREET

#### CLEAR VISION AREAS ARE ESTABLISHED AS FOLLOWS:

STREET

- 1) CLEAR VISION TRIANGLES SHALL BE ESTABLISHED AT THE CORNER OF ANY PROPERTY ADJACENT TO INTERSECTIONS OF PUBLIC OR PRIVATE STREETS, ALLEYS, MID-BLOCK LANES, AND/OR RAILROAD RIGHTS-OF-WAY.
- 2) THE TWO LEGS OF THE CLEAR VISION TRIANGLE ARE EACH MEASURED FROM THE POINT OF INTERSECTION OF THE TWO CORNER LOT LINES, SPECIAL SETBACK LINES, OR ACCESS EASEMENT LINES. WHERE LOT LINES HAVE ROUNDED CORNERS, THE LOT LINES ARE EXTENDED IN A STRAIGHT LINE TO A POINT OF INTERSECTION. THE CLEAR VISION AREA EXTENDS TO THE FACE OF CURB AT THE STREET OR ALLEY
- 3) THE LENGTH OF BOTH LEGS OF THE CLEAR VISION AREA TRIANGLE IS AS FOLLOWS:

TYPICAL, ALL ZONES: 15 FEET
RAILROADS: 15 FEET
ALLEY INTERSECTION: 10 FEET
DRIVEWAYS: 10 FEET

- 4) WITHIN THE CLEAR VISION AREA, OBSTRUCTIONS TO VISION OTHER THAN A STREET SIGN, POST, OR POLE LESS THAN 8 INCHES IN DIAMETER SHALL BE CLEARED FROM PROPERTY UNDER THE CONTROL OF THE CITY, HOMEOWNER, OR DEVELOPER. SHRUBS OR FOLIAGE MUST NOT EXCEED 2'-0" IN HEIGHT. PLANTING NEW TREES OR INSTALLATION OF COMMUNICATION TOWERS AND TRANSFORMERS, ARE NOT PERMITTED WITHIN THE CLEAR VISION AREA. EXISTING TREES MUST BE MAINTAINED/LIMBED TO A MINIMUM OF 8'-0" ABOVE THE TOP OF CURB OR 12'-0" ABOVE ADJACENT BIKE LANES.
- 5) DRIVEWAY APPROACHES AND DRIVEWAYS ARE NOT PERMITTED WITHIN THE CLEAR VISION AREA. ON-STREET PARKING DESIGN DOES NOT INCLUDE SPACES WITHIN 20 FEET OF AN ACCESSIBLE RAMP OR WITHIN 10 FEET OF A DRIVEWAY APPROACH.

NOTE: INTERSECTION SIGHT TRIANGLES ARE DISTINCT FROM, AND IN ADDITION TO, CLEAR VISION AREAS. INTERSECTION SIGHT TRIANGLE DIMENSIONS VARY WITH STREET WIDTH, GEOMETRY, TOPOGRAPHY, AND POSTED SPEED; ADDITIONAL CLEARING AS NECESSARY TO PROVIDE CLEAR INTERSECTION SIGHT DISTANCE IS ALSO REQUIRED; SEE CHAPTER 3.3 OF THE CITY OF BEND DESIGN STANDARDS.

	N AJD ROADWAY	CITY OF BEND	SCALE NTS
-	DATE	STANDARD DRAWING	DATE 12/10/21
		710 NW WALL ST., BEND, OREGON 97701	APPR
	CITY OF BEND	CLEAR VISION AREAS AT INTERSECTIONS	STD DWG R-2

6" 6" R 3" R 3/4" · R 3/8" DRIVEWAY LIP ¿R3/4" CURB"E" (SEE NOTE 3) "F" **EXPOSURE** R 3/8" "H" "H" 3" SCH 40 PVC SLOPE AT R 3/4" BATTER 6:1 1-2% TYP. TO GUTTER. MATCH PIPE IE TO CURB FLOWLINE. PIPE CUT FLUSH WITH CURB FACE. NO PIPE BATTER 6:1 BATTER 6:1 JOINTS WITHIN CURB. **BASE ROCK** (SEE NOTE 2) CITY STANDARD CURB CITY ISLAND/MEDIAN RESIDENTIAL STANDARD CURB MOUNTABLE CURB W/ WEEP HOLE 2% - 5% SLOPE OR GUTTER - 6" → MATCH STREET -SEE 150' MAX WIDTH "G" CROSS SLOPE; 4% NOTE 3 (45' ON HAND FORMED CURB) **CONTRACTION JOINT** MAX SLOPE AT **CURB** ADA RAMPS R 1/2' **EXPOSURE** LIGHT BROOM **ROADWAY 4** 15' **∗ CURB** FINISH ON ALL SURFACE **EXPOSED** CURB **EXPANSION JOINT** "È" **CURB FACES** HEIGHT (SEE NOTE 1) 6" MIN. -R 3/4" MAX **CURB EXPANSION & CONTRACTION JOINTS** BASE ROCK 1" LIP (SEE MIN. SLOPE CITY STANDARD CURB AND GUTTER NOTE 2) 6" MIN. 12 MAX BATTER 6:1 MEDIAN STAMPED CONCRETE 8" (SEE NOTE 4) LOW PROFILE 6" REVEAL MOUNTABLE CURB (TYP) .5" REVEAL (TYP) R= 2' TAPERED CURB **ROAD CLASS** CURB HEIGHT - H **CURB EXPOSURE - E GUTTER WIDTH - G** "H" "W" "SW" OR "S" **ARTERIAL** 16' 12' CONCRETE STAMP, 4" COLLECTOR 14" 18" TALL,  $\frac{1}{4}$ " INSET, CENTER OVER LOCAL 6" 18" 12" SERVICE, CENTERED ON CURB EXPOSURE. NORMAL CURB **CURB SERVICE STAMP** 1/2" EXPANSION JOINT FILLER Ε TOP OF CURB **GUTTER LINE VARIES** TO BE REMOVED UPON **BOTTOM OF CURB** 4" **EXTENSION OF CURB** 1.5' 4.5' 6' **CURB ENDING DETAIL** SEE NOTES ON STD DWG R-3A DRAWN AJD CITY OF BEND SCALE NTS DIV ROADWAY STANDARD DRAWING REV DATE DATE 12/10/21 710 NW WALL ST., BEND, OREGON 97701 APPR CITY OF BEND **CONCRETE CURB** STD DWG R-3

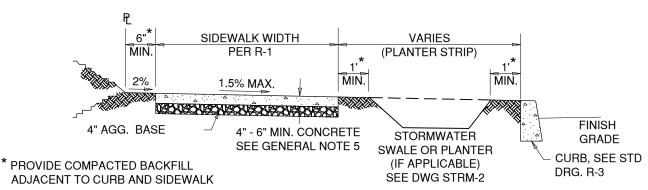
NOTES FOR STO DWG R-3. PM

- 1. EXPANSION JOINTS REQUIRED AT END OF RADII, DRIVEWAY APRONS, POINTS OF CURVATURE, AND NO GREATER THAN 150' MAXIMUM.
- 2. AGGREGATE BASE SHALL CONFORM TO SPECIFICATION SECTION 00640/00641. DEPTH AS REQUIRED TO MATCH BOTTOM OF STREET SECTION, 4" MIN.
- 3. SLOPE DRIVEWAY TOWARD STREET. 3/4" MAXIMUM LIP AT GUTTER, 1" ON COLLECTORS AND ARTERIALS.
- 4. MOUNTABLE CURB PERMITTED ON LOCAL STREET CUL-DE-SACS, ALLEYS, AND WHERE PERMITTED BY THE CITY ENGINEER. WHERE SIDEWALK ABUTS CURB, SIDEWALK SHALL BE MIN. 6" THICK
- 5. CURB AND GUTTER MAY BE REQUIRED WHEN GUTTER SLOPE IS BETWEEN 0.5% 0.75%.
- 6. WEEP HOLE CURBS ON RESIDENTIAL STREETS ONLY WHERE APPROVED. SIDEWALK CANNOT BE PLACED CURB TIGHT WITH WEEP HOLES. SEE R-4A AND STRM-18.
- 7. CONCRETE MATERIAL AND PLACEMENT SHALL CONFORM TO SPECIFICATION SECTION 00759.
- 8. LOCATE TAPERED CURB ON DOWNSTREAM SIDE OF PEDESTRIAN REFUGE IN CENTER MEDIAN CURB RAMPS TO PROTECT FROM SNOW PLOW DAMAGE.

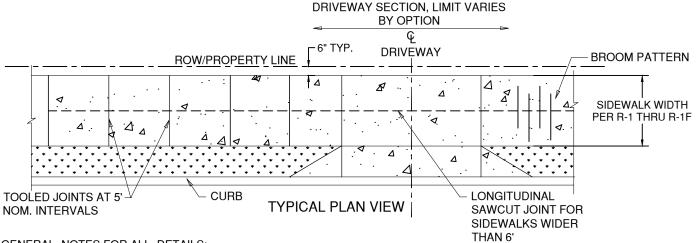
DRAWN DIV R	AJD ROADWAY	CITY OF BEND	SCALE NTS			
-	DATE (R)	STANDARD DRAWING	DATE 12/10/21			
		710 NW WALL ST., BEND, OREGON 97701	APPR	ı		
1 1	CITY OF BEND	CONODETE CUIDA NOTEC		ı		
	CITY OF BEND	CONCRETE CURB NOTES	STD DWG R-3A	ı		

Prelimary
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6" SIDEWALK WIDTH
PER R-1
2" MIN. ASPHALT
SEE NOTE 6



TYPICAL CROSS SECTION



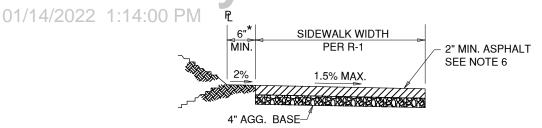
GENERAL NOTES FOR ALL DETAILS:

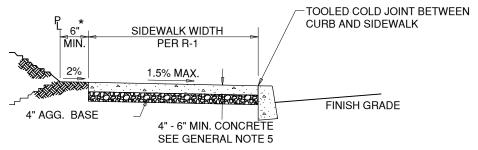
- SIDEWALKS SET BACK ADJACENT TO PROPERTY LINE ARE STANDARD. USE CURB-TIGHT SIDEWALKS ONLY WHERE PERMITTED. SIDEWALK SHALL BE PROPERTY-TIGHT EXCEPT TO MEANDER AROUND TREES OR BARRIERS (UTILITIES, SIGNS, ETC.) OR PER DESIGN STANDARD SECTION 3.4.7 - HILLSIDE.
- 2. CONST. EXPANSION JOINTS AT 25' MAXIMUM SPACING, AND AT POINTS OF TANGENCY, AND ON EACH SIDE OF DRIVEWAY APRONS. EXPANSION JOINTS MUST BE FULL DEPTH OF PAVING SECTION.
- 3. CONST. CONTRACTION JOINTS AT 5' MAXIMUM SPACING, AND AT ENDS OF EACH RAMP.
- 4. FOR DRIVEWAY DETAILS, SEE STD. DRGS. R-5A THROUGH R-5E.

4" AGG. BASE-

- 5. SIDEWALK THICKNESS MINIMUM 4" THICK, TYPICAL. MINIMUM 6" THICK IF SIDEWALK IS INTENDED AS PORTION OF DRIVEWAY, CURB RAMP, OR ADJACENT TO MOUNTABLE CURB.
- 6. ASPHALT SHARED-USE PATH WHERE APPROVED BY THE ENGINEER.

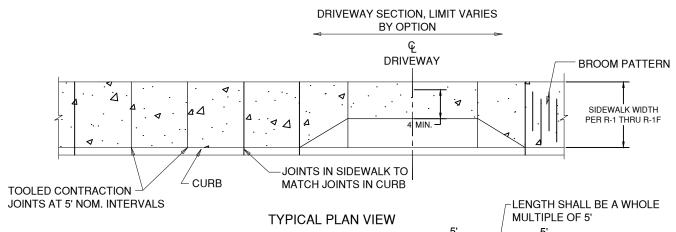
_	N AJD ROADWAY	(CD)	CITY OF BEND	SCALE NTS
-	DATE	(GHID)	STANDARD DRAWING	DATE 12/10/21
		<b>LII</b>	710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	SHARED-USE PATH/SIDEWALK, SETBACK	STD DWG R-4A





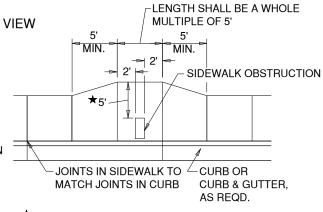
\* PROVIDE COMPACTED BACKFILL ADJACENT TO CURB AND SIDEWALK

TYPICAL CROSS SECTION



#### GENERAL NOTES FOR ALL DETAILS:

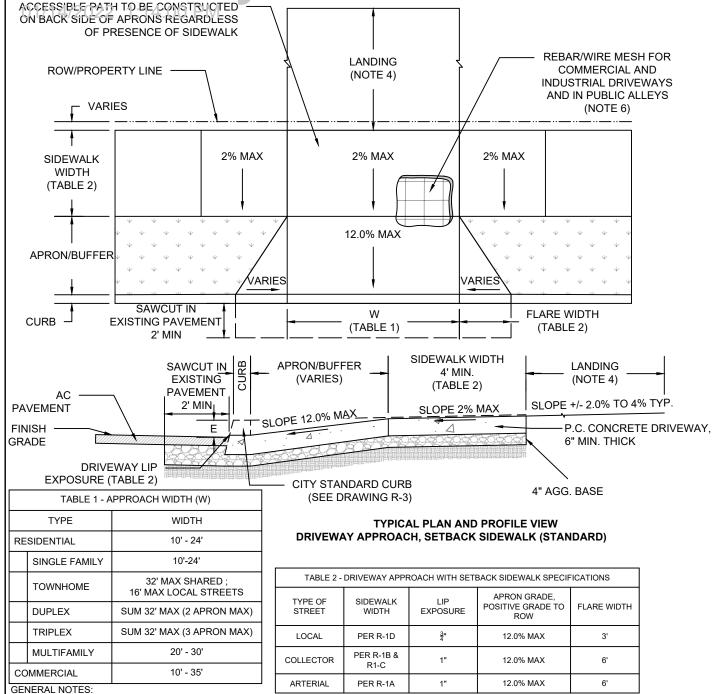
- 1. SIDEWALKS SET BACK ADJACENT TO PROPERTY LINE ARE STANDARD. USE CURB-TIGHT SIDEWALKS ONLY WHERE PERMITTED.
- 2. CONST. EXPANSION JOINTS AT 25' MAXIMUM SPACING, AND AT POINTS OF TANGENCY, AND ON EACH SIDE OF DRIVEWAY APRONS. EXPANSION JOINTS MUST BE FULL DEPTH OF PAVING SECTION.
- 3. CONST. CONTRACTION JOINTS AT 5' MAXIMUM SPACING, AND AT ENDS OF EACH RAMP.
- 4. FOR DRIVEWAY DETAILS, SEE STD. DRGS. R-5A THROUGH R-5E.
- SIDEWALK THICKNESS MINIMUM 4" THICK, TYPICAL. MINIMUM 6" THICK IF SIDEWALK IS PORTION OF DRIVEWAY, CURB RAMP, OR ADJACENT TO MOUNTABLE CURB.
- 6. ASPHALT SHARED-USE PATH WHERE APPROVED BY THE ENGINEER.



★ WHEN SITE CONSTRAINTS PROHIBIT A 5'
PASSAGE, THE ENGINEER MAY DIRECT THIS
TO BE REDUCED, BUT NO LESS THAN 4'.

REQUIRED SIDEWALK WIDENING AROUND OBSTRUCTIONS

-	WN AJD ROADWAY	(TO)	CITY OF BEND	SCALE NTS
RE		(GHID)	STANDARD DRAWING	DATE 12/10/21
		(CI)	710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	SHARED-USED PATH/SIDEWALK, CURB-TIGHT	STD DWG R-4B



- 1. SIDEWALKS SHALL MEET ALL STANDARDS OF CURRENT PUBLIC RIGHTS OF WAY ACCESSIBILITY GUIDELINES (PROWAG).
- 2. CURB AND SIDEWALK TYPES VARY, SEE PLANS. SEE STD. DRG. R-3 FOR CURB DETAILS. SEE STD. DRGS. R-4A & R-4B FOR SIDEWALK DETAILS.
- TOOLED JOINTS ARE REQUIRED AT ALL DRIVEWAY SLOPE BREAK LINES.
- 4. THE LANDING SHALL BE PAVED WITH CONCRETE OR ASPHALT SURFACE FOR A MINIMUM OF 20 FEET. PAVING BEYOND THE LANDING SHALL BE IN ACCORDANCE WITH THE BEND DEVELOPMENT CODE. CONSTRUCT AS DIRECTED OR AS SHOWN ON PLANS. DO NOT ENTER PRIVATE PROPERTY WITHOUT APPROPRIATE PERMIT OR EASEMENT. MATERIAL WITHIN THE ROW SHALL BE CONCRETE.
- 5. CHECK THE GUTTER FLOW DEPTH AT DRIVEWAY LOCATIONS TO ASSURE THAT THE DESIGN FLOOD DOES NOT OVERTOP THE BACK OF SIDEWALK AT DRIVEWAY. IF OVERTOPPING OCCURS PLACE AN INLET AT UPSTREAM SIDE OF DRIVEWAY OR PERFORM OTHER APPROVED DESIGN MITIGATION.
- #4 REBAR (2'0" ON CENTER, TO BE SUSPENDED TO CENTER OF CONCRETE DEPTH) REQUIRED IN COMMERCIAL AND INDUSTRIAL DRIVEWAYS AND IN PUBLIC ALLEYS. 6"X6" 10 GAUGE MINIMUM WELDED WIRE MAY BE USED IN LIEU OF REBAR.
- CONCRETE DRIVEWAY APRON REQUIRED WHERE SIDEWALK AND/OR CURB IS EXISTING/PROPOSED, OTHERWISE AN ASPHALT APPROACH CAN BE INSTALLED TO EDGE OF PAVEMENT TO SIMILAR WIDTHS OF THE DRIVEWAY APRON AS APPROVED BY THE CITY ENGINEER.
- REFER TO THE BEND DEVELOPMENT CODE 3.1.400 AND 3.6.200 FOR NUMBER AND WIDTH OF APRONS PERMITTED PER LOT.
- THIS SAME STANDARD APPLIES TO ALLEYS

	N AJD ROADWAY	CITY OF BEND	SCALE NTS
REV	DATE (R-1)	STANDARD DRAWING	DATE 12/10/21
		710 NW WALL ST., BEND, OREGON 97701	APPR
	CITY OF BEND	DRIVEWAY APPROACH, SETBACK (STANDARD)	STD DWG R-5A

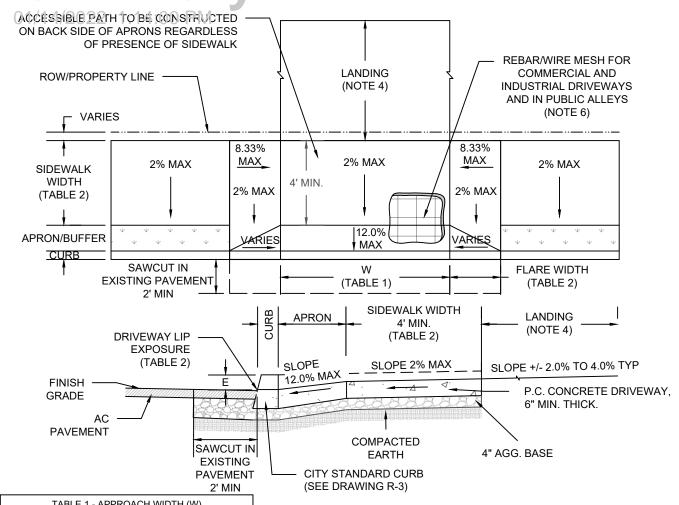


	TABLE 1 - APPROACH WIDTH (W)				
	TYPE	WIDTH			
RESIDENTIAL		10' - 24'			
	SINGLE FAMILY	10'-24'			
TOWNHOME		32' MAX SHARED ; 16' MAX LOCAL STREETS			
	DUPLEX	SUM 32' MAX (2 APRON MAX)			
	TRIPLEX	SUM 32' MAX (3 APRON MAX)			
MULTIFAMILY		20' - 30'			
CC	MMERCIAL	10' - 35'			
~=	OFNEDAL MOTEO				

# TYPICAL PLAN AND PROFILE VIEW DRIVEWAY APPROACH, SETBACK, PARTIALLY LOWERED (ALTERNATE B)

TABLE 2 - DRIVEWAY APPROACH WITH SETBACK SIDEWALK SPECIFICATIONS					
TYPE OF STREET	SIDEWALK WIDTH	LIP EXPOSURE	APRON GRADE, POSITIVE GRADE TO ROW	FLARE WIDTH	
LOCAL	PER R-1D	<u>3</u> " 4	12.0% MAX	3'	
COLLECTOR	PER R-1B & R1-C	1"	12.0% MAX	6'	
ARTERIAL	PER R-1A	1"	12.0% MAX	6'	

#### GENERAL NOTES:

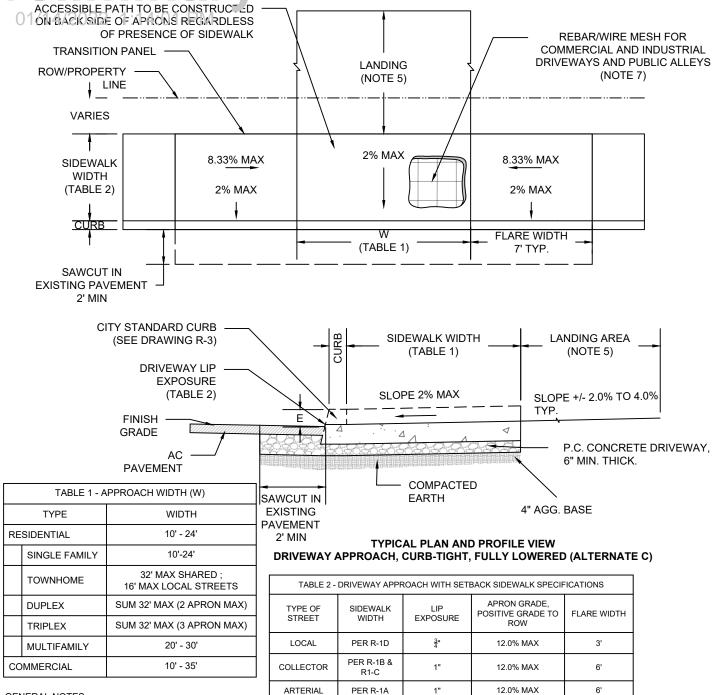
- 1. SIDEWALKS SHALL MEET ALL STANDARDS OF CURRENT PUBLIC RIGHTS OF WAY ACCESSIBILITY GUIDELINES (PROWAG).
- 2. CURB AND SIDEWALK TYPES VARY, SEE PLANS. SEE STD. DRG. R-3 FOR CURB DETAILS. SEE STD. DRGS. R-4A & R-4B FOR SIDEWALK DETAILS.

3. TOOLED JOINTS ARE REQUIRED AT ALL DRIVEWAY SLOPE BREAK LINES.

- 4. THE LANDING SHALL BE PAVED WITH CONCRETE OR ASPHALT SURFACE FOR A MINIMUM OF 20 FEET. PAVING BEYOND THE LANDING SHALL BE IN ACCORDANCE WITH THE BEND DEVELOPMENT CODE. CONSTRUCT AS DIRECTED OR AS SHOWN ON PLANS. DO NOT ENTER PRIVATE PROPERTY WITHOUT APPROPRIATE PERMIT OR EASEMENT. MATERIAL WITHIN THE ROW SHALL BE CONCRETE.
- 5. CHECK THE GUTTER FLOW DEPTH AT DRIVEWAY LOCATIONS TO ASSURE THAT THE DESIGN FLOOD DOES NOT OVERTOP THE BACK OF SIDEWALK AT DRIVEWAY. IF OVERTOPPING OCCURS PLACE AN INLET AT UPSTREAM SIDE OF DRIVEWAY OR PERFORM OTHER APPROVED DESIGN MITIGATION.
- 6. #4 REBAR (2'0" ON CENTER, TO BE SUSPENDED TO CENTER OF CONCRETE DEPTH) REQUIRED IN COMMERCIAL AND INDUSTRIAL DRIVEWAYS AND IN PUBLIC ALLEYS. 6"X6" 10 GAUGE MINIMUM WELDED WIRE MAY BE USED IN LIEU OF REBAR.
- 7. CONCRETE DRIVEWAY APRON REQUIRED WHERE SIDEWALK AND/OR CURB IS EXISTING/PROPOSED, OTHERWISE AN ASPHALT APPROACH CAN BE INSTALLED TO EDGE OF PAVEMENT TO SIMILAR WIDTHS OF THE DRIVEWAY APRON AS APPROVED BY THE CITY ENGINEER.
- 8. REFER TO THE BEND DEVELOPMENT CODE 3.1.400 AND 3.6.200 FOR NUMBER AND WIDTH OF APRONS PERMITTED PER LOT.

THIS SAME STANDARD APPLIES TO ALLEYS

	N AJD ROADWAY	CITY OF BEND	SCALE NTS
$\vdash$	DATE	STANDARD DRAWING	DATE 12/10/21
		710 NW WALL ST., BEND, OREGON 97701	APPR
	CITY OF BEN	D DRIVEWAY APPROACH, SETBACK, PARTIALLY LOWERED (ALTERNATE B)	STD DWG R-5B



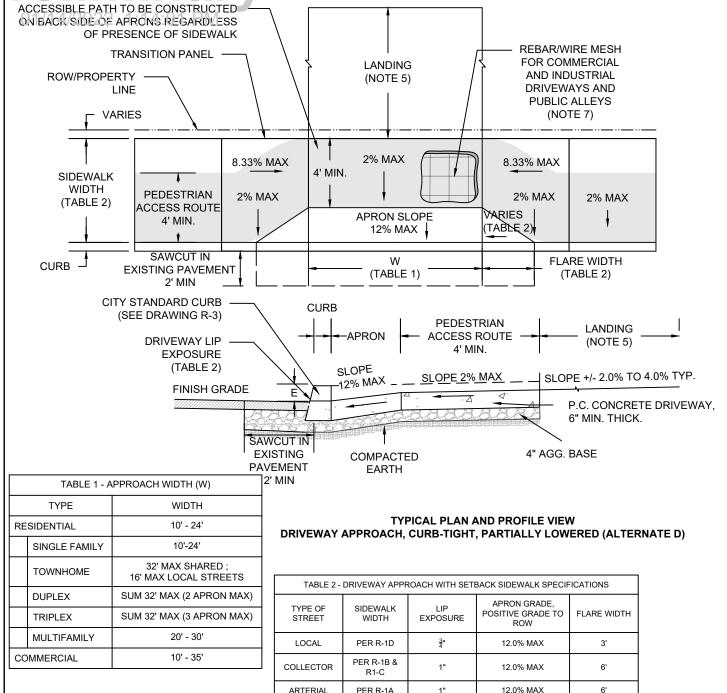
#### GENERAL NOTES:

- 1. SIDEWALKS SHALL MEET ALL STANDARDS OF CURRENT PUBLIC RIGHTS OF WAY ACCESSIBILITY GUIDELINES (PROWAG).
- 2. CURB AND SIDEWALK TYPES VARY, SEE PLANS. SEE STD. DRG. R-3 FOR CURB DETAILS. SEE STD. DRGS. R-4A & R-4B FOR SIDEWALK DETAILS.

3. TOOLED JOINTS ARE REQUIRED AT ALL DRIVEWAY SLOPE BREAK LINES.

- 4. THE LANDING SHALL BE PAVED WITH CONCRETE OR ASPHALT SURFACE FOR A MINIMUM OF 20 FEET. PAVING BEYOND THE LANDING SHALL BE IN ACCORDANCE WITH THE BEND DEVELOPMENT CODE. CONSTRUCT AS DIRECTED OR AS SHOWN ON PLANS. DO NOT ENTER PRIVATE PROPERTY WITHOUT APPROPRIATE PERMIT OR EASEMENT. MATERIAL WITHIN THE ROW SHALL BE CONCRETE.
- 5. CHECK THE GUTTER FLOW DEPTH AT DRIVEWAY LOCATIONS TO ASSURE THAT THE DESIGN FLOOD DOES NOT OVERTOP THE BACK OF SIDEWALK AT DRIVEWAY. IF OVERTOPPING OCCURS PLACE AN INLET AT UPSTREAM SIDE OF DRIVEWAY OR PERFORM OTHER APPROVED DESIGN MITIGATION. 6. #4 REBAR (2'0" ON CENTER, TO BE SUSPENDED TO CENTER OF CONCRETE DEPTH) REQUIRED IN COMMERCIAL AND INDUSTRIAL DRIVEWAYS AND IN
- PUBLIC ALLEYS. 6"X6" 10 GAUGE MINIMUM WELDED WIRE MAY BE USED IN LIEU OF REBAR. CONCRETE DRIVEWAY APRON REQUIRED WHERE SIDEWALK AND/OR CURB IS EXISTING/PROPOSED, OTHERWISE AN ASPHALT APPROACH CAN BE INSTALLED TO EDGE OF PAVEMENT TO SIMILAR WIDTHS OF THE DRIVEWAY APRON AS APPROVED BY THE CITY ENGINEER.
- REFER TO THE BEND DEVELOPMENT CODE 3.1.400 AND 3.6.200 FOR NUMBER AND WIDTH OF APRONS PERMITTED PER LOT.
- THIS SAME STANDARD APPLIES TO ALLEYS 9.

-	VN AJD ROADWAY	CITY OF BEND	SCALE NTS
-	DATE	STANDARD DRAWING	DATE 12/10/21
		710 NW WALL ST., BEND, OREGON 97701	APPR
	CITY OF BEND	DRIVEWAY APPROACH, CURB-TIGHT, FULLY LOWERED (ALTERNATE C)	STD DWG R-5C



#### **GENERAL NOTES:**

1. SIDEWALKS SHALL MEET ALL STANDARDS OF CURRENT PUBLIC RIGHTS OF WAY ACCESSIBILITY GUIDELINES (PROWAG).

**ARTERIAL** 

2. CURB AND SIDEWALK TYPES VARY, SEE PLANS. SEE STD. DRG. R-3 FOR CURB DETAILS. SEE STD. DRGS. R-4A & R-4B FOR SIDEWALK DETAILS.

TOOLED JOINTS ARE REQUIRED AT ALL DRIVEWAY SLOPE BREAK LINES.

- 4. THE LANDING SHALL BE PAVED WITH CONCRETE OR ASPHALT SURFACE FOR A MINIMUM OF 20 FEET. PAVING BEYOND THE LANDING SHALL BE IN ACCORDANCE WITH THE BEND DEVELOPMENT CODE. CONSTRUCT AS DIRECTED OR AS SHOWN ON PLANS. DO NOT ENTER PRIVATE PROPERTY WITHOUT APPROPRIATE PERMIT OR EASEMENT. MATERIAL WITHIN THE ROW SHALL BE CONCRETE.
- 5. CHECK THE GUTTER FLOW DEPTH AT DRIVEWAY LOCATIONS TO ASSURE THAT THE DESIGN FLOOD DOES NOT OVERTOP THE BACK OF SIDEWALK AT DRIVEWAY. IF OVERTOPPING OCCURS PLACE AN INLET AT UPSTREAM SIDE OF DRIVEWAY OR PERFORM OTHER APPROVED DESIGN MITIGATION.

PER R-1A

1"

6'

- #4 REBAR (2'0" ON CENTER, TO BE SUSPENDED TO CENTER OF CONCRETE DEPTH) REQUIRED IN COMMERCIAL AND INDUSTRIAL DRIVEWAYS AND IN PUBLIC ALLEYS. 6"X6" 10 GAUGE MINIMUM WELDED WIRE MAY BE USED IN LIEU OF REBAR.
- CONCRETE DRIVEWAY APRON REQUIRED WHERE SIDEWALK AND/OR CURB IS EXISTING/PROPOSED, OTHERWISE AN ASPHALT APPROACH CAN BE INSTALLED TO EDGE OF PAVEMENT TO SIMILAR WIDTHS OF THE DRIVEWAY APRON AS APPROVED BY THE CITY ENGINEER.
- 8. REFER TO THE BEND DEVELOPMENT CODE 3.1.400 AND 3.6.200 FOR NUMBER AND WIDTH OF APRONS PERMITTED PER LOT.

9. THIS SAME STANDARD APPLIES TO ALLEYS

DRA	™ AJD ROADWAY	AFO.	CITY OF BEND	SCALE NTS
RE\		i (&HID) i	STANDARD DRAWING	DATE 12/10/21
		<b>Qui</b>	710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	DRIVEWAY APPROACH, CURB-TIGHT, PARTIALLY LOWERED (ALTERNATE D)	STD DWG R-5D

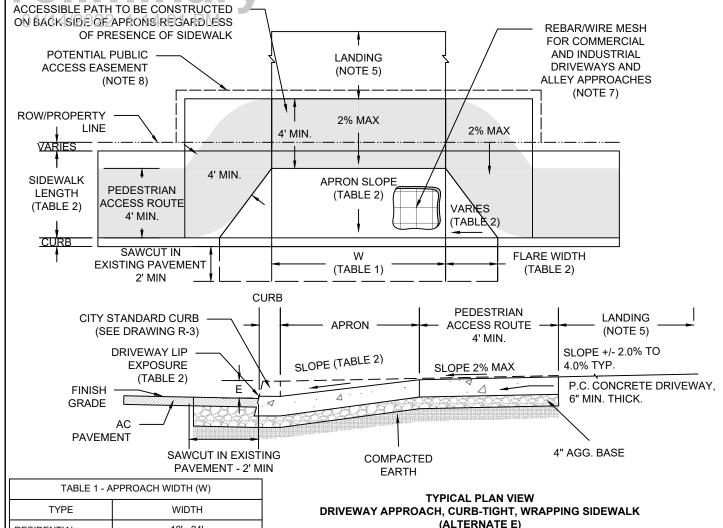


TABLE 1 - APPROACH WIDTH (W)				
TYF	PE	WIDTH		
RESIDENT	IAL	10' - 24'		
SINGLE	FAMILY	10'-24'		
TOWN	НОМЕ	32' MAX SHARED ; 16' MAX LOCAL STREETS		
DUPLE	X	SUM 32' MAX (2 APRON MAX)		
TRIPLE	ĒΧ	SUM 32' MAX (3 APRON MAX)		
MULTIFAMILY		20' - 30'		
COMMERC	IAL	10' - 35'		

# (ALTERNATE E)

TABLE 2 - DRIVEWAY APPROACH SPECIFICATIONS WITH CURB-TIGHT WRAPPING SIDEWALK						
TYPE OF STREET	MINIMUM SIDEWALK WIDTH	APRON GRADE, POSITIVE GRADE TO ROW	FLARE WIDTH			
LOCAL	PER R-1D	<u>3</u> " 4	12.0% MAX	3'		
COLLECTOR	PER R-1B & R1-C	1"	12.5% MAX	6'		
ARTERIAL	PER R-1A	1"	12.5% MAX	6'		

#### GENERAL NOTES:

- 1. SIDEWALKS SHALL MEET ALL STANDARDS OF CURRENT PUBLIC RIGHTS OF WAY ACCESSIBILITY GUIDELINES (PROWAG).
- 2. CURB AND SIDEWALK TYPES VARY, SEE PLANS. SEE STD. DRG. R-3 FOR CURB DETAILS. SEE STD. DRGS. R-4A & R-4B FOR SIDEWALK DETAILS.
- 3. TOOLED JOINTS ARE REQUIRED AT ALL DRIVEWAY SLOPE BREAK LINES.
- 4. THE LANDING SHALL BE PAVED WITH CONCRETE OR ASPHALT SURFACE FOR A MINIMUM OF 20 FEET. PAVING BEYOND THE LANDING SHALL BE IN ACCORDANCE WITH THE BEND DEVELOPMENT CODE. CONSTRUCT AS DIRECTED OR AS SHOWN ON PLANS. DO NOT ENTER PRIVATE PROPERTY WITHOUT APPROPRIATE PERMIT OR EASEMENT. MATERIAL WITHIN THE ROW SHALL BE CONCRETE.
- 5. CHECK THE GUTTER FLOW DEPTH AT DRIVEWAY LOCATIONS TO ASSURE THAT THE DESIGN FLOOD DOES NOT OVERTOP THE BACK OF SIDEWALK AT DRIVEWAY. IF OVERTOPPING OCCURS PLACE AN INLET AT UPSTREAM SIDE OF DRIVEWAY OR PERFORM OTHER APPROVED DESIGN MITIGATION.
- 6. #4 REBAR (2'0" ON CENTER, TO BE SUSPENDED TO CENTER OF CONCRETE DEPTH) REQUIRED IN COMMERCIAL AND INDUSTRIAL DRIVEWAYS AND IN PUBLIC ALLEYS. 6"X6" 10 GAUGE MINIMUM WELDED WIRE MAY BE USED IN LIEU OF REBAR.
- CONCRETE DRIVEWAY APRON REQUIRED WHERE SIDEWALK AND/OR CURB IS EXISTING/PROPOSED, OTHERWISE AN ASPHALT APPROACH CAN BE INSTALLED TO EDGE OF PAVEMENT TO SIMILAR WIDTHS OF THE DRIVEWAY APRON AS APPROVED BY THE CITY ENGINEER.
- REFER TO THE BEND DEVELOPMENT CODE 3.1.400 AND 3.6.200 FOR NUMBER AND WIDTH OF APRONS PERMITTED PER LOT.
- 9. THIS SAME STANDARD APPLIES TO ALLEYS

	N AJD ROADWAY	(CO)	CITY OF BEND	SCALE NTS
_	DATE	(GHID)	STANDARD DRAWING	DATE 12/10/21
		<b>UII</b>	710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	DRIVEWAY APPROACH, CURB-TIGHT, WRAPPING SIDEWALK (ALTERNATE E)	STD DWG R-5E

#### **GENERAL NOTES:**

- 1. CITY OF BEND STD DWGS R-6, R-6A, R-6B, AND R-6C ARE INTENDED AS A SUMMARY OF PROWAG REQUIREMENTS. SEE CURRENT PROWAG GUIDELINES FOR COMPLETE REQUIREMENTS.
- 2. SLOPES USED FOR DESIGN ARE TYPICALLY LESS THAN THE MAXIMUMS TO ALLOW FOR CONSTRUCTION TOLERANCES. RECOMMENDED DESIGN SLOPES ARE AS FOLLOWS:

PROWAG MAX. SLOPE	DESIGN MAX. SLOPE
1:10 (10%)	9.5%
1:12 (8.33%)	7.5%
1:20 (5.0%)	4.5%
1:50 (2%)	1.5%

- 3. GRADE BREAKS ARE NOT PERMITTED ON THE SURFACE OF CURB RAMPS, BLENDED TRANSITIONS, LANDINGS, AND GUTTER AREAS WITHIN THE PEDESTRIAN ACCESS ROUTE.
- 4. THE COUNTER SLOPE OF THE GUTTER OR STREET AT THE FOOT OF A CURB RAMP, LANDING, OR BLENDED TRANSITION SHALL BE 5% MAXIMUM.
- 5. SURFACES OF CURB RAMPS, BLENDED TRANSITIONS, AND LANDINGS SHALL COMPLY WITH R302.7. GRATINGS, ACCESS COVERS, AND OTHER APPURTENANCES SHALL NOT BE LOCATED ON CURB RAMPS, LANDINGS, BLENDED TRANSITIONS AND GUTTERS WITHIN THE PEDESTRIAN ACCESS ROUTE.
- 6. SURFACE DISCONTINUITIES SHALL NOT EXCEED 0.5 in. MAXIMUM. VERTICAL DISCONTINUITIES BETWEEN 0.25 in. AND 0.5 in. MAXIMUM SHALL BE BEVELED AT 1:2 MINIMUM. THE BEVEL SHALL BE APPLIED ACROSS THE ENTIRE LEVEL CHANGE. SEE PROWAG R302.7.2.
- 7. WHERE SIDEWALKS ARE CONSTRUCTED OUTSIDE THE RIGHT OF WAY, A PUBLIC ACCESS EASEMENT MUST BE RECORDED OVER THE PRIVATE PROPERTY ENCROACHMENT.
- 8. 6 INCHES OF COMMERCIAL GRADE CONCRETE PER CITY SPEC 00440 AND 4 INCHES OF STATE SPEC AGGREGATE PER CITY SPEC 00640/00641 IS REQUIRED FOR CONSTRUCTION OF CURB RAMPS, FLARES, AND LANDINGS.
- 9. DETECTABLE WARNING SURFACES COMPLYING WITH PROWAG R305 SHALL BE PROVIDED, WHERE A CURB RAMP, LANDING, OR BLENDED TRANSITION CONNECTS TO A STREET.
- 10. DETECTABLE WARNING SURFACES SHALL EXTEND 24 in. MINIMUM IN THE DIRECTION OF TRAVEL AND THE FULL WIDTH OF THE CURB RAMP (EXCLUSIVE OF FLARES), THE LANDING, OR THE BLENDED TRANSITION.
- 11. THE ROWS OF TRUNCATED DOMES IN A DETECTABLE WARNING SURFACE SHALL BE ALIGNED TO BE PERPENDICULAR OR RADIAL TO THE GRADE BREAK BETWEEN THE RAMP, LANDING, OR BLENDED TRANSITION AND THE STREET.
- 12. THE CLEAR WIDTH OF LANDINGS BLENDED TRANSITIONS, AND CURB RAMPS, EXCLUDING FLARES, SHALL BE 4.0 FT. MINIMUM.

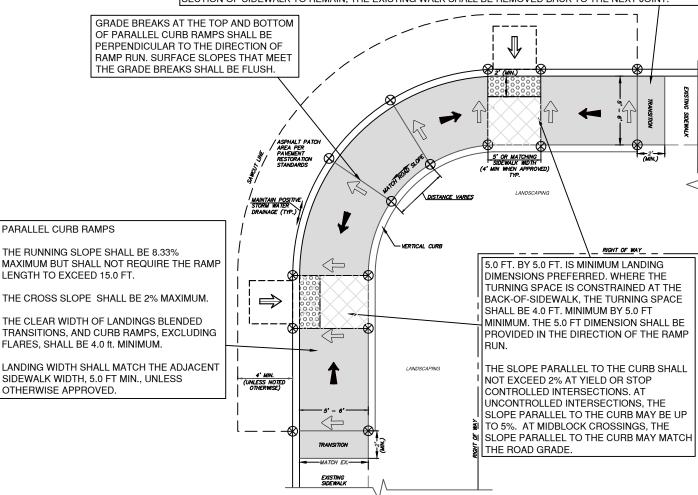
	N AJD ROADWAY	(CO)	CITY OF BEND	SCALE NTS
-	DATE	(8HD)	STANDARD DRAWING	DATE 12/10/21
		<b>CUIP</b>	710 NW WALL ST., BEND, OREGON 97701	APPR
	C	ITY OF BEND	CURB RAMP GENERAL NOTES	STD DWG R-6

ONE CORNER OF THE DETECTABLE WARNING CURB EXPOSURE TO BE MINIMUM 3-INCHES (6-INCH PREFERRED) MUST BE WITHIN 2 in. OF THE GRADE BREAK: NO OTHER POINT ON THE LEADING EDGE OF THE BETWEEN RAMPS UNLESS DETECTABLE WARNING MAY BE MORE THAN 5 ft. OTHERWISE APPROVED. FROM THE BACK OF CURB. FLARED SIDES WITH A SLOPE OF 10% MAXIMUM, MEASURED PARALLEL TO THE CURB LINE, SHALL WHERE BOTH ENDS OF THE BOTTOM GRADE BE PROVIDED WHERE A PEDESTRIAN CIRCULATION BREAK, COMPLYING WITH PROWAG R305.2.1, PATH CROSSES THE CURB RAMP OR WHEN THE ARE 5.0 ft. OR LESS FROM THE BACK OF CURB, FLARE ABUTS A HARD SURFACE. THE DETECTABLE WARNING SHALL BE LOCATED ON THE RAMP SURFACE AT THE BOTTOM GRADE FLARES REQUIRED UNLESS BARRIERS EXIST OR BREAK. WHERE EITHER END OF THE BOTTOM GRADE BREAKS AT THE TOP AND WHERE APPROVED BY THE CITY ENGINEER. FLARE GRADE BREAK IS MORE THAN 5.0 ft. FROM THE **BOTTOM OF PERPENDICULAR** SLOPE CAN EXCEED 10% WHERE ABUTTING MIN 2' BACK OF CURB, THE DETECTABLE WARNING CURB RAMPS SHALL BE LANDSCAPING AREA SHALL BE LOCATED ON THE LOWER LANDING. PERPENDICULAR TO THE DIRECTION OF RAMP RUN. AT LEAST ONE END OF THE BOTTOM GRADE BREAK SHALL BE AT THE BACK OF CURB. THE GRADE FROM THE BOTTOM OF THE DETECTABLE WARNING TO THE I ANDING SHALL BE A CONTINUOUS GRADE (5% MAXIMUM). SURFACE SLOPES THAT MEET THE GRADE BREAKS SHALL BE FLUSH. A LANDING 5.0 ft. MINIMUM BY 5.0 ft. MINIMUM SHALL BE PROVIDED AT THE FLARED SIDES ARE PREFERRED, TOP OF THE CURB RAMP AND SHALL BE PARTICULARLY WHERE SUBJECT TO PERMITTED TO OVERLAP OTHER LANDINGS AND CLEAR SPACE. RUNNING DAMAGE FROM ONCOMING TRAFFIC AND SNOWPLOWS. IF ADJACENT CONSTRAINTS AND CROSS SLOPES AT INTERSECTIONS PREVENT FLARE CONSTRUCTION, SIDE OF SHALL BE 2% MAXIMUM. RAMPS MAY BE RETURNED IF PROTECTED FROM CROSS TRAVEL BY LANDSCAPING. STREET FURNITURE, POLES, OR  $\langle \vdash \rangle$ RIGHT OF WAY FOLIPMENT PERPENDICULAR CURB RAMPS (UNLESS NOTED THE RUNNING SLOPE SHALL BE 5% MINIMUM AND 8.3% MAXIMUM BUT SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15.0 FT. BLENDED TRANSITIONS SHALL COMPLY WITH R303.3. RUNNING SLOPE SHALL BE 5% MAXIMUM AND CROSS SIDEWALK OR OTHER TRAVERSABLE SURFACE SLOPE SHALL BE 2% MAXIMUM. THE RAMP CROSS SLOPE SHALL NOT EXCEED 2% AT DETECTABLE WARNING SURFACE (DWS) YIELD OR STOP CONTROLLED INTERSECTIONS. AT UNCONTROLLED INTERSECTIONS, THE CROSS SLOPE LEVEL AREA (TURNING SPACE/LANDING) 2% MAY TRANSITION FROM 2% AT THE LANDING UP TO 5%  $\triangleleft$ AT THE CURB. AT MIDBLOCK CROSSINGS, THE CROSS MAX. SLOPE IN ANY DIRECTON SLOPE MAY TRANSITION TO MATCH THE ROAD GRADE. CROSS SLOPE 2.0% MAX. WIDTH OF RAMP TO MATCH SUP/SIDEWALK STANDARD WIDTH FOR ROAD CROSS-SECTION; ALTERNATE MAY BE APPROVED BY CITY ENGINEER IN EXISTING NON-COMPLIANT AREAS WITH NO PLANS FOR RUNNING SLOPE 5.0% MAX. SIDEWALK UPGRADES. RUNNING SLOPE 8.3% MAX. COUNTER SLOPE 5.0% MAX. ASCENDING OR TRANSITION PANEL FROM RAMP TO EXISTING **DESCENDING** SIDEWALK (WHERE REQUIRED TO MATCH EX. SIDEWALK CROSS SLOPE). MAX. GRADES ARE NOT FLARE SLOPE 10% MAX. SPECIFIED BY PROWAG. ADJUST LENGTH AS NEEDED TO PROVIDE 0.5% CHANGE PER FT. IF PROPOSED MATCH LINE LOCATION FALLS WITHIN 2 FEET FROM AN EXISTING JOINT IN THE SECTION OF SIDEWALK TO 4'X4' CLEAR SPACE REMAIN, THE EXISTING WALK SHALL BE REMOVED BACK TO THE NEXT JOINT. REQUIRED DESIGN ELEVATIONS SLOPES TO BE SHOWN WITH DESIGN TYPICAL PERPENDICULAR CURB RAMP ACCORDING TO PROWAG REQUIREMENTS NOT TO SCALE - ROTATED TO FIT DRAWN AJD CITY OF BEND SCALE NTS DIV ROADWAY STANDARD DRAWING REV DATE DATE 12/10/21 710 NW WALL ST., BEND, OREGON 97701 APPR TYPICAL PERPENDICULAR CURB RAMP CITY OF BEND STD DWG R-6A

<u>Preliminary</u>

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TRANSITION PANEL FROM RAMP TO EXISTING SIDEWALK (WHERE REQUIRED TO MATCH EX. SIDEWALK CROSS SLOPE). MAX. GRADES ARE NOT SPECIFIED BY PROWAG, ADJUST LENGTH AS NEEDED TO PROVIDE SMOOTH TRANSITION. IF PROPOSED MATCH LINE LOCATION FALLS WITHIN 2 FEET FROM AN EXISTING JOINT IN THE SECTION OF SIDEWALK TO REMAIN, THE EXISTING WALK SHALL BE REMOVED BACK TO THE NEXT JOINT.



TYPICAL PARALLEL CURB RAMP ACCORDING TO PROWAG REQUIREMENTS NOT TO SCALE - ROTATED TO FIT



SIDEWALK OR OTHER TRAVERSABLE SURFACE

DETECTABLE WARNING SURFACE (DWS)



LEVEL AREA (TURNING SPACE/LANDING) 2% MAX. SLOPE IN ANY DIRECTON



CROSS SLOPE 2.0% MAX.



RUNNING SLOPE 8.3% MAX.



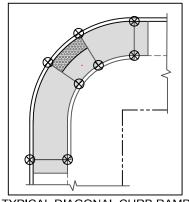
COUNTER SLOPE 5.0% MAX. ASCENDING OR DESCENDING



4'X4' CLEAR SPACE



REQUIRED DESIGN ELEVATIONS SLOPES TO BE SHOWN WITH DESIGN



TYPICAL DIAGONAL CURB RAMP
REQUIRES CITY APPROVAL FOR CONSTRUCTION
ACCORDING TO PROWAG REQUIREMENTS
NOTE: DIAGONAL CURB RAMP ALTERNATE IS ONLY ALLOWED WHEN DIRECTIONAL

NOTE: DIAGONAL CURB RAMP ALTERNATE IS ONLY ALLOWED WHEN DIRECTION/ RAMPS ARE NOT POSSIBLE AND MUST BE APPROVED BY THE CITY ENGINEER.

DRAWN AJD

DIV ROADWAY

BEV DATE

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#### CITY OF BEND

STANDARD DRAWING

710 NW WALL ST., BEND, OREGON 97701

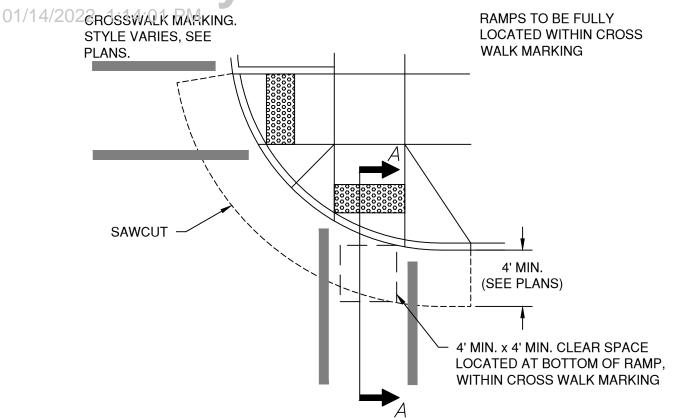
TYPICAL PARALLEL CURB RAMP

SCALE NTS

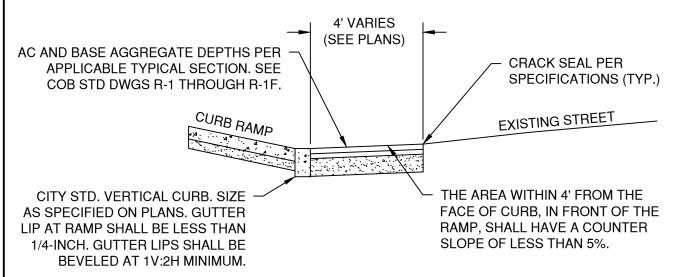
DATE 12/10/21

APPR

STD DWG R-6B



# CROSS WALK - CURB RAMP ORIENTATION NOT TO SCALE



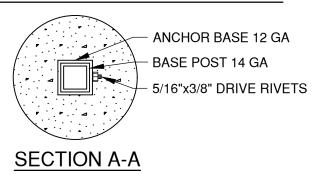
NOTE: IN AREAS WITH UNIT PAVER CROSS WALKS, REMOVE EXISTING PAVERS, AND RE-INSTALL AT GRADES TO ACHIEVE THESE REQUIREMENTS.

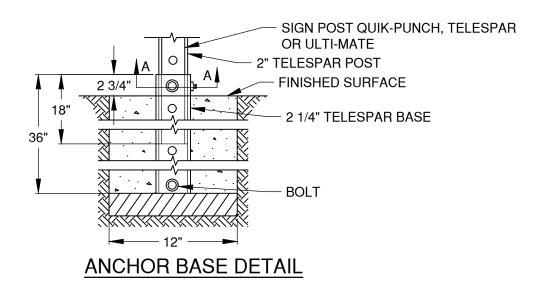
# TYPICAL RAMP / ASPHALT PATCH SECTION NOT TO SCALE

_	N AJD ROADWAY	CITY OF BEND	SCALE NTS
REV	DATE (8-11)	STANDARD DRAWING	DATE 12/10/21
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	CITY OF BEND	CURB RAMP DETAILS	STD DWG R-6C

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#### INSTALLATION IN NEW CONSTRUCTION





#### NOTES:

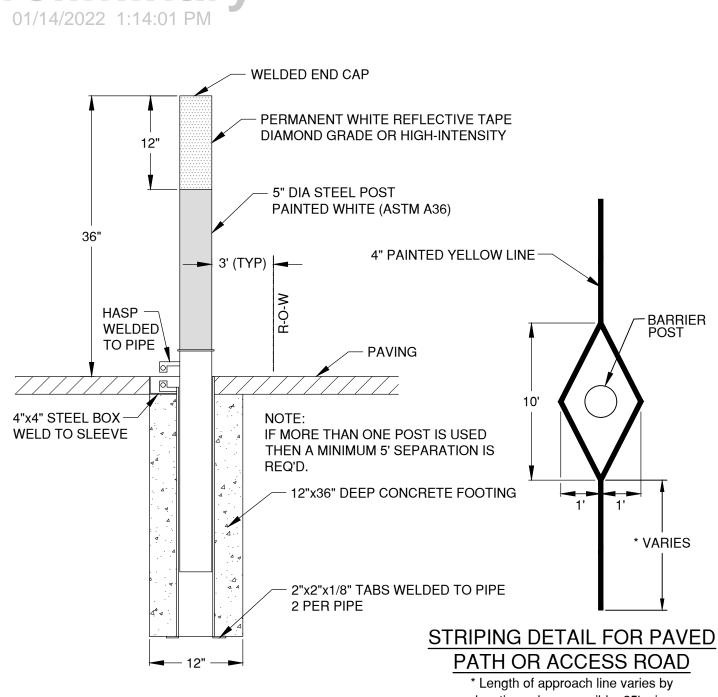
- 1. USE PSST ANCHOR BASE FOUNDATION FOR ALL SIGN LOCATIONS OTHER THAN IN MEDIANS AND ROUNDABOUT SPLITTER ISLANDS PER STD DWG R-7A.
- 2. ANCHOR BASE HOLES AND BOTTOM OF ANCHOR BASE SHALL BE COVERED SO THAT CONCRETE DOES NOT SEEP INTO ANCHOR BASE DURING SETTING
- BASE SHOULD BE SET SEPARATELY FROM POST WITH ANCHOR BOLT IN BASE BOTTOM ONLY
- 4. POST SHOULD BE ABLE TO SLIDE FREELY WHEN RIVET IS REMOVED
- 5. FOR LARGE SIGNS THAT EXCEED WINDLOADS 2 1/2" POSTS MAY BE APPROVED BY CITY ENGINEER

-	™ AJD ROADWAY		CITY OF BEND	SCALE NTS
REV	DATE		STANDARD DRAWING	DATE 12/10/21
			710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	PSST ANCHOR BASE FOUNDATION	STD DWG R-7

PERFORATED STEEL SIGN POST SHALL BE Z 울" BOLT WITH SQUARE TUBE INSTALLED 0 0 2 FLATWASHERS, (PSST) ACCORDING TO THE AND 1 NUT. (2 REQUIRED) 0 0 **WASHER** MANUFACTURER'S 1 BOLT WITH 0 0 INSTRUCTIONS. 3" BOLT 2 SLEEVES, 2 FLATWASHERS, 0 AND NUT. (3 REQUIRED) 3"x3"x7 GUAGE  $\bigcirc$ TOP SLIP BASE PLATE **ANCHOR TUBE NUT TEFLON GASKET WELDED TO WASHER BOTTOM SLIP** BOTTOM SLIP BASE. **BASE PLATE** TOP SLIP Ш **BASE PLATE** 2 **BOLT SLEEVE** NUT **TEFLON GASKET** WASHER **BOLT SLEEVE BOTTOM** 91/2" SLIP BASE 0 **PLATE** က ā **WASHER** ੀ" BOLT SLIP BASE EXPLODED VIEW 3"x3"x7 GUAGE NO SCALE **ANCHOR TUBE WELDED TO PLAN BOTTOM** NO SCALE SLIP BASE. 9 DIRECTION TRAVĚI WELL 1' - 0"  $\nabla$ COMPACTED **GRANULAR** P SLIP BASE ELEVATION **MATERIAL** NO SCALE SIGN FACE NOTES: 1. USE PSST SLIP BASE FOUNDATION FOR SIGNS INSTALLED IN MEDIANS AND ROUNDABOUT SPLITTER ISLANDS.

- 2. MATERIAL GRADE FOR BASE HARDWARE CONNECTION SHALL BE ACCORDING TO THE MANUFACTURER'S RECOMMENDATION AND BASED ON CRASH TESTING.
- 3. SLIP BASE STEEL SHALL BE HOT DIPPED GALVANIZED OR APPROVAL EQUAL.
- 4. FOOTING CONCRETE SHALL BE COMMERCIAL GRADE CONCRETE (FC=3000PSI) PER SPECIFICATION 00440. THE CGC MIXTURE MAY BE ACCEPTED AT THE SITE OF PLACEMENT ACCORDING TO 00440.14.
- 5. ALL SLIP BASES SHALL BE PRE-ASSEMBLED BY THE MANUFACTURER AND SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.
- 6. SLIP BASE DETAILS SHOWN ARE NOT FOR A SPECIFIC MANUFACTURER AND ARE ONLY SHOWN TO CONVEY GENERAL PIECES OF A SLIP BASE SYSTEM. SPECIFIC SLIP BASE MATERIAL WILL BE ACCORDING TO THE MANUFACTURER'S DOCUMENTATION.

-	DRAWN AJD DIV ROADWAY REV DATE		(RID)	CITY OF BEND	SCALE NTS
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			CITY OF BEND	PSST SLIP BASE FOUNDATION	STD DWG R-7A

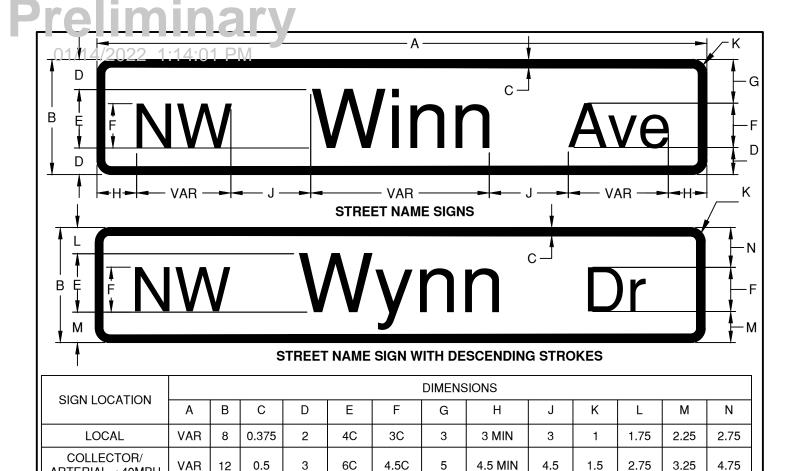


## location, where possible, 25' min.

#### NOTES:

- 1. POSTS OR BOLLARDS SHALL BE SET BACK BEYOND THE CLEAR ZONE OF THE ADJACENT STREET OR BE OF A BREAKAWAY DESIGN. THE POST SHALL BE PERMANENTLY REFLECTORIZED FOR NIGHTTIME VISIBILITY AND PAINTED WHITE FOR IMPROVED DAYTIME AND NIGHT TIME VISIBILITY.
- 2. ON PAVED PATHS OR ACCESS ROADS, APPLY PAVEMENT MARKINGS PER STRIPING DETAIL.

DRA	WN AJD ROADWAY	CITY OF BEND	SCALE NTS
REV		STANDARD DRAWING	DATE 12/10/2021
		710 NW WALL ST., BEND, OREGON 97701	APPR
	CITY OF BENI	REMOVABLE POST AND MARKINGS	STD DWG R-7B



#### NOTES:

ARTERIAL ≤ 40MPH
COLLECTOR/

ARTERIAL > 40 MPH
OVERHEAD

 SIGNS INSTALLED ALONG PUBLIC STREETS SHALL BE FABRICATED AND INSTALLED TO CONFORM TO THE MUTCD AND CITY OF BEND SPECIFICATIONS.

6C

9C

2. UNLESS OTHERWISE SPECIFIED, STREET NAME SIGNS SHALL BE FABRICATED AS FOLLOWS:

5

6

8C

12C

- a. SIGN SUBSTRATE: SHEET ALUMINUM (GAUGE 0.80 FOR GROUND-MOUNT) WITH ROUNDED CORNERS
- b. RETRO-REFLECTIVE SHEETING: GREEN BACKGROUND WITH WHITE LEGEND, USING HIP/TYPE G FOR GROUND-MOUNTED SIGNS, AND DIAMOND GRADE/TYPE G2 FOR SIGNS MOUNTED OVERHEAD;

7.67

10

5.33 MIN

9 MIN

1.875

2.25

6

9

5

5

5

6

7.67

9.50

c. LETTERING SHALL BE LOWER-CASE WITH INITIAL UPPER-CASE LETTERS;

0.75

1

- d. SERIES C2000 FONT, WITH LETTERING AND LETTER SPACING PER THE FEDERAL HIGHWAY ADMINISTRATION'S STANDARD ALPHABETS AS SHOWN IN THE CURRENT EDITION OF THE STANDARD HIGHWAY SIGNS AND PAVEMENT MARKINGS MANUAL. (\* EXCEPT FOR OVERHEAD SIGNS, WHERE SIGNS EXCEED 36" LONG, SERIES B2000 FONT SHALL BE USED);
- e. BOTTOM STREET SIGNS (CLOSEST TO THE REGULATORY/STOP SIGN) SHALL BE TWO SINGLE-SIDED WITH PREDRILLED HOLES. SIGNS SHALL BE RIVETED BACK TO BACK ON THE SQUARE TUBE POST, CENTERED ON THE POST.
- f. BOTTOM STREET SIGNS SHALL BE USED FOR SIDE STREET.

VAR

VAR

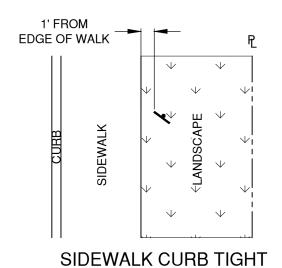
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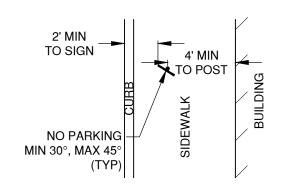
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- g. TOP STREET SIGN SHALL BE DOUBLE SIDED. TOP SIGN USED FOR MAINLINE STREET.
- 3. ALL SIGNS SHALL BE REVIEWED AND APPROVED BY THE CITY OF BEND ENGINEERING DEPARTMENT PRIOR TO FABRICATIONS AND INSTALLATION.
- 4. TYPICAL INSTALLATION INCLUDES 2-INCH SQUARE TUBE CAPS WITH 90-DEGREE ANGLE BRACKETS ON 2-INCH PERFORATED SQUARE TUBE STEEL POSTS. USE 5- OR 6-INCH BLADE MOUNTS FOR SIGNS LESS THAN 36" WIDE; 12-INCH MOUNTS FOR SIGNS 36-INCHES OR WIDER OR OVER 6-INCHES HIGH. SEE STANDARD DRAWINGS R-7 AND R-9.
- SIGN WIDTHS VARY WITH LEGEND. WHERE SITE CONSTRAINTS LIMIT AVAILABLE SPACE, REDUCED LETTER HEIGHT, FONT STYLE, LINE SPACING, OR EDGE SPACING WILL BE CONSIDERED. REDUCTIONS IN SPACING BETWEEN LETTERS OR WORDS IS NOT PERMITTED.
- 6. WHERE PRIVATE STREETS INTERSECT WITH PUBLIC STREETS, INSTALL A BLACK ON YELLOW PRIVATE DR SIGN WITH 4-INCH CAPITAL LETTERS (ODOT SIGN POLICY SIGN #OW14-3) DIRECTLY BELOW THE PRIVATE STREET NAME SIGN (OR ON A SEPARATE POST, IF NOT AT AN INTERSECTION).
- 7. FOR ADDITIONAL INFORMATION, REFER TO MUTCD SECTION 2A AND 2D, AND CITY OF BEND TECHNICAL SPECIFICATION SECTION 00940. 8. CONFIRM SIGN SIZE WITH CITY ENGINEER FOR SIGNS ON EXISTING TRAFFIC SIGNAL POLES OR MAST ARMS.

-	DRAWN AJD  DIV ROADWAY  REV DATE APPR		ALD!	CITY OF BEND	SCALE NTS
			(GHID)	STANDARD DRAWING	DATE 12/10/21
			<b>Vali</b>	710 NW WALL ST., BEND, OREGON 97701	APPR
			CITY OF BEND	STANDARD STREET NAME SIGNS	STD DWG R-8

2 EA. 1-SIDED SIGNS 1 EA. 2-SIDED SIGN MOUNTED **BACK-TO-BACK** W/ POST TOP BRACKET MOUNTED TO SIGN POST, RIVET SIGNS - 24" MIN -TO EDGE OF **TOGETHER AT ENDS NEAREST SIGN** PRIVATE SIGN 3" TYP OR OW14-3 DEPTH OF PRVT -STOP (WHEN APPLICABLE) SIGN RIDER STOP SIGN IF REQUIRED 4' MIN 7'-0" MIN **ALL SIGNS** 2' MIN P SIGN POST PER COB STD. DWG **LANDSCAPE** R-7 AND R-8 SEE DRAWINGS R-7 AND R-7A FOR SIGN SUPPORT DETAILS SIDEWALK PROPERTY TIGHT **CURB** 





SIDEWALK FROM CURB TO NEAR BUILD

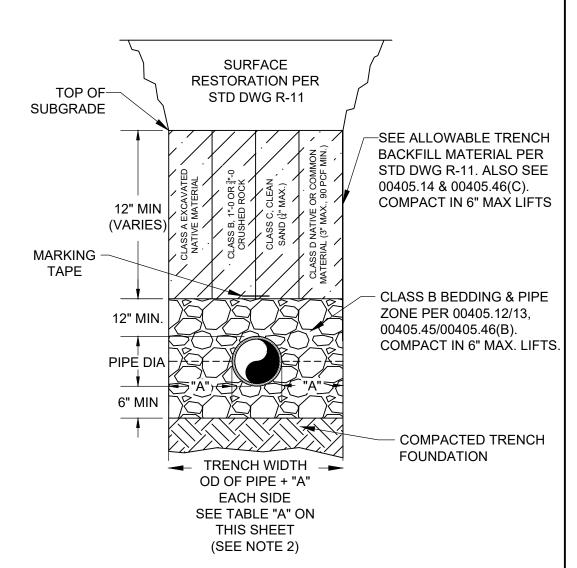
#### NOTES:

- 1. SET TO MUTCD SPECS
- 2. SEE R-8 FOR COB STREET NAME SIGN REQUIREMENTS.
- 3. CHECK THAT SIGN IS NOT OBSCURED BY VEGETATION, TRIM IF NEEDED.
- 4. INSTALL ALL SIGNS WITH 5/16"X3/8" DRIVE RIVETS

	N AJD ROADWAY	(CD)	CITY OF BEND	SCALE NTS
-	DATE	(GHID)	STANDARD DRAWING	DATE 12/10/21
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	C	ITY OF BEND	STANDARD STREET SIGN PLACEMENT	STD DWG R-9

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TAB	TABLE A					
PIPE DIA (IN)	"A" (IN)					
4	10					
6	10					
8	10					
10	10					
12	12					
15	12					
18	16					
21	16					
24	18					
30	18					
36	24					
42	24					
48	24					
54	24					
60	24					
66	24					
72	24					



#### NOTES:

- 1. ALL COMPACTION TO COMPLY WITH SPECIFICATION SECTION 00330.43 AND 00405.46(c).
- 2. A FRANCHISE UTILITY THAT IS A SINGLE CONDUIT AND IS 4 INCHES IN DIAMETER OR LESS MAY BE CENTERED IN A 12-INCH WIDE TRENCH PROVIDED THAT THE TRENCH CAN ACCOMMODATE THE COMPACTION EQUIPMENT. TRENCH PATCH SHALL BE IN ACCORDANCE WITH STD DWG R-11 WHERE THE TEE PATCH SHALL NOT BE LESS THAN 12 INCHES ON BOTH SIDES OF THE TRENCH. OVERALL WIDTH MAY BE REDUCED FROM 4 FEET, BUT IN NO CIRCUMSTANCES RESULT IN TEE PATCHES LESS THAN 12 INCHES AND AN OVERALL MINIMUM WIDTH OF 3 FEET.
- 3. CLASS E CLSM, MAY BE ALLOWED FOR TRENCH BACKFILL WHERE COMPACTION CANNOT BE MET DUE TO THE PRESENCE OF EXISTING UTILITIES

		CITY OF BEND	TYPICAL TRENCH SECTION	STD DWG R-10
		Cir	·	APPR
RE	DATE		710 NW WALL ST., BEND, OREGON 97701	DATE 12/10/21
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_	WN AJD		CITY OF BEND	SCALE NTS

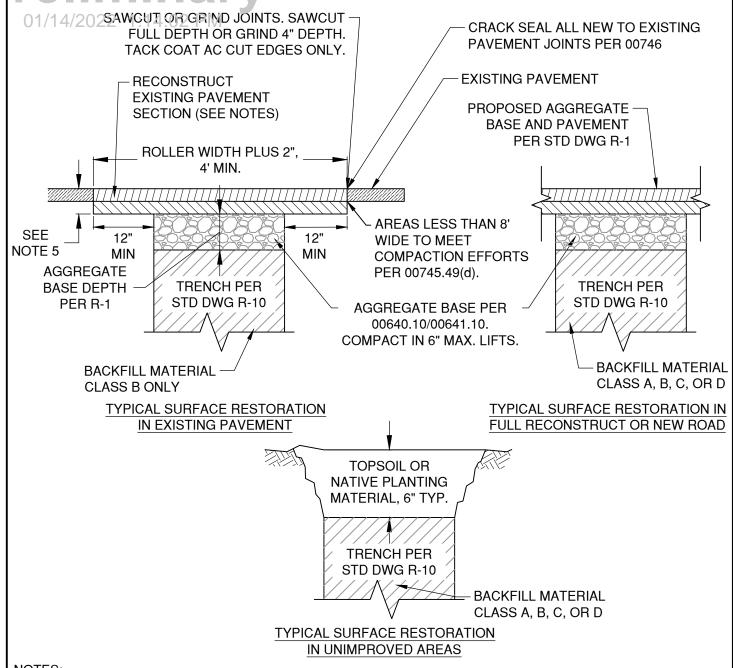
4" TOPSOIL 01/14/2022 14:02TRENCH WIDTH **COMPACTED TO 90%** IF IN LANDSCAPED AREA OR 4" COMPACTED to 95% **TRENCH** CLASS 'B' **BACKFILL PER BACKFILL IF IN** STD DWG R-10 STREET 30" MIN. CONCEPTUAL SHOULDER (SEE 30" MIN. **ONLY** NOTES 4&5). UTILITY PLACEMENT WILL VARY PIPE ZONE PER STD DWG R-10.  $\mathbb{P}\mathbb{P}$ 6'  $\mathbb{P}(\mathbb{P})$ 36" MIN. FOR GAS 30" MIN **PRIMARY** COORDINATE **POWER** WITH GAS 12" **UTILITIES COMPANY FOR** ALT. WATER/SEWER SERVICE PIPE ZONE MIN MATERIAL AND 12" **ADDITIONAL** 4" MIN **SEPARATION** FROM REQUIREMENTS SIDE WALL  $\mathbb{C}(\mathsf{T})$ CABLE/PHONE CLASS B BEDDING **POWER** 12" WATER SERVICE 10' MIN \* VERTICAL SEPARATION BETWEEN SEWER / WATER VERTICAL UTILITIES SHALL BE 12" UNLESS SEPARATION AS REQUIRED WATEF APPROVED OTHERWISE. AT NO TIME BY OAR 333-061 AND/OR MAIN SHALL SEPARATION BE LESS THAN 6". AWWA STANDARDS. SEWER SERVICE NOTES: 1. ALL COMPACTION TO COMPLY WITH CITY OF BEND STANDARDS 2. ALL FRANCHISE UTILITIES SHALL BE INSTALLED IN UL APPROVED SCHEDULE 40. SEWER PVC CONDUIT WITH SCHEDULE 40 PVC FITTINGS UNLESS OTHERWISE APPROVED. MAIN UTILITY SIZES AND LOCATION SHALL BE DETERMINED BY THE UTILITY COMPANY. LOCATION TO BE SHOWN AND APPROVED BY CITY WITH A RIGHT OF WAY (ROW) PERMIT. 4. WHERE STORM SWALES ARE PROPOSED WITHIN THE LANDSCAPE STRIP, FRANCHISE UTILITIES SHALL BE INSTALLED OUTSIDE OF THE SWALE AREA. 5. TOP SOIL LAYER TO BE COMPACTED TO 90% MAX DENSITY. WHERE SIDEWALK IS PLACED OVER FRANCHISE UTILITY TRENCH, NO TOP SOIL SHALL BE PLACED AND SIDEWALK TO BE CONSTRUCTED TO COMPLY WITH CITY STANDARDS R-4A AND R-4B 6. STANDARD SHOWN FOR NEW CONSTRUCTION. MODIFICATIONS SHALL BE MADE WHEN WITHIN EXISTING DEVELOPMENTS WHERE APPROVED BY THE CITY ENGINEER. 7. UTILITIES OUTSIDE THE RIGHT OF WAY SHALL BE WITHIN A PUBLIC UTILITIES EASEMENT (PUE). BACKFILL AND INSTALLATION REQUIREMENTS STILL COMPLY WITH THE PUE. 8. NO SWALES OR SURFACE STORMWATER DRAINAGE FACILITIES ARE PERMITTED OVER FRANCHISE UTILITIES. DRAWN AJD CITY OF BEND SCALE NTS DIV ROADWAY STANDARD DRAWING REV DATE DATE 12/10/2021 710 NW WALL ST., BEND, OREGON 97701

FRANCHISE UTILITY JOINT TRENCH

CITY OF BEND

APPR

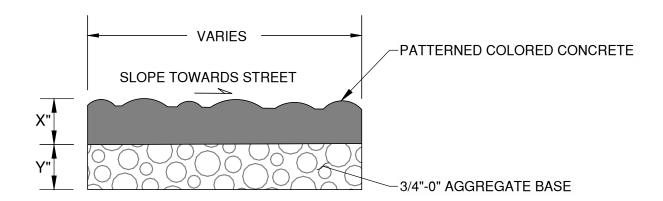
STD DWG R-10A



- 1. SURFACE RESTORATION IN EXISTING PAVEMENT TO COMPLY WITH SPECIFICATION 00495.
- UNIMPROVED AREA CONSISTS OF ANY PORTION OF THE ROW THAT HAS NOT BEEN IMPROVED TO A CITY STANDARD AND CONSISTS MOSTLY OF NATIVE VEGETATED AREAS. UNIMPROVED AREAS ALSO INCLUDE AREAS WITHIN THE LANDSCAPE STRIP AND PUES.
- 3. ALL EXISTING AC OR PCC PAVEMENT SHALL BE SAWCUT PRIOR TO REPAVING. CONCRETE SHALL BE CUT AND REPLACED TO THE NEAREST JOINT(S).
- 4. CONCRETE PAVEMENT SHALL BE REPLACED WITH CONCRETE TO A MINIMUM THICKNESS OF 6" OR TO THE THICKNESS OF REMOVED PAVEMENT, WHICHEVER IS GREATER
- 5. PLACE ACP A MINIMUM THICKNESS PER R-1 OR TO THE THICKNESS OF REMOVED PAVEMENT, WHICHEVER IS GREATER. PLACE ACP IN 2" MAX LIFTS.

DR DI	WN AJD ROADWAY	(FD)	CITY OF BEND	SCALE NTS
RE	_	(BHD)	STANDARD DRAWING	DATE 12/10/21
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		CITY OF BEND	TRENCH SURFACE RESTORATION	STD DWG R-11

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### X DIMENSION:

- MEDIAN/ALL ADJACENT TO TRAVEL LANE = 6"
- ONLY BACK SIDE OF SIDEWALK OR SEPARATE FROM TRAVEL LANE = 4"
- TRUCK APRON = 9"

#### Y DIMENSION:

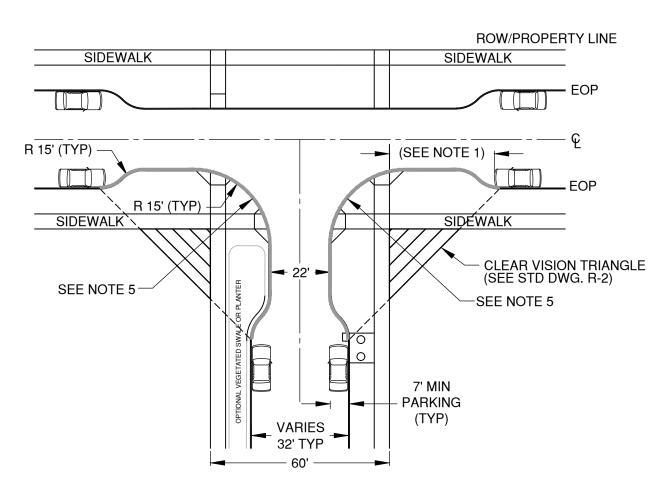
- MEDIAN/ALL ADJACENT TO TRAVEL LANE = 6"
- ONLY BACK SIDE OF SIDEWALK OR SEPARATE FROM TRAVEL LANE = 4"
- TRUCK APRON = 6"

- 1. STAMPED CONCRETE SURFACE TEXTURE PATTERN SHALL BE BRICKFORM "FLAGSTONE" TM-700) WITH SAWCUT GROOVE JOINTS 1/3 CONCRETE DEPTH.
- 2. GLAZE AND SEAL PER MANUFACTURERS SPECS.
- 3. INTEGRAL COLOR: DAVIS SPANISH GOLD (3 LBS. #5084)
- 4. RELEASE COLOR: DAVIS DARK GREY (#860)

-	N AJD ROADWAY		CITY OF BEND	SCALE NTS
REV	DATE		STANDARD DRAWING	DATE 12/10/21
		fill) L	710 NW WALL ST., BEND, OREGON 97701	APPR
	CITY	OF BEND	PATTERNED COLORED CONCRETE DETAIL	STD DWG R-24

NON-TAREBED TAPERED TAPER RATIO IS EQUAL TO POSTED SPEED :X TAPER EX: 1:25 (X=MPH) STD. MOUNTABLE CURB PER R-3 INSTALL 36" YELLOW FLEXSTAKE TM 750, OR APPROVED EQUAL. WITH TWO REFLECTIVE STRIPS DELINEATOR ON THE END OF THE BULLNOSE AND WHERE THE MEDIAN BEGINS USING CONCRETE ANCHOR (REDHEAD OR EQUIVALENT) INSTALL YELLOW RAISED RETROREFLECTIVE PAVEMENT MARKERS (5 MIN) AT 3' MAX SPACING AROUND MEDIAN NOSE AND AT 15' SPACING TO AND BEYOND TAPER SECTION AS SHOWN -INSTALL POST WITH R4-7 SIGN (24" X 30"); RETROREFLECTIVE YELLOW CURB MARKING ON TOP OF CURB TO SAME LIMITS AS RETROREFLECTIVE MARKERS VARIES WITH APPROACH SPEED 3' FOR 25 MPH MIN 4' FOR 35 MPH MIN **VARIES** 4' FOR 45 MPH MIN VARIES 4" SOLID **BEGIN** MEDIAN STAMPED YELLOW STRIPE CONCRETE OR 4' MIN.-4" SOLID AS APPROVED YELLOW STRIPE **PLAN VIEW STANDARD** MOUNTABLE CURB ONCRETE TAPER PER R-3 FLUSH WITH ISLAND NOSE 1:10 SLOPE CURR MEDIANS SHALL NOT BE **DOWELED INTO ROADWAYS UNLESS** GRAY BROOM FINISHED CONCRETE. **APPROVED BY** 6" THICKNESS. CITY ENGINEER. 1" CURB REVEAL AT END OF BULLNOSE -ALTERNATE LOCATION IF R1-6A IN STREET PEDESTRIAN CROSSING ISOMETRIC VIEW SIGN IS INSTALLED AT MARKED **CROSSWALK** DRAWN AJD CITY OF BEND SCALE NTS DIV ROADWAY STANDARD DRAWING REV DATE DATE 12/10/21 710 NW WALL ST., BEND, OREGON 97701 APPR MEDIAN END DETAIL STD DWG R-25

01/14/2022 1:14:02 PM



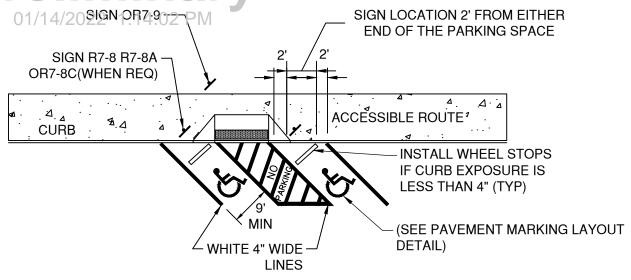
- 1. NO PARKING WITHIN THE CLEAR VISION OR 20 FEET OF THE INTERSECTION, WHICHEVER IS GREATER. 2. AS REQUIRED BY THE CITY ENGINEER, INSTALL YELLOW 36" TALL YELLOW SURFACE MOUNTED TUBULAR MARKERS, PER SPECIFICATION SECTION 00856 FOR PLOW SIGNAGE AT CURB EXTENSIONS.
- 3. USE LOW GROWING VEGETATION FOR BIORETENTION SWALES/ PLANTERS LOCATED IN CURB EXTENSIONS.
- 4. CURB RETURNS TO BE CONSTRUCTED PER DESIGN STANDARD.
- 5. YELLOW CURB PAINT ON RETURNS IS REQUIRED IN COMMERCIAL AND HIGH DENSITY RESIDENTIAL AREAS

	<sup>№</sup> AJD ROADWAY		CITY OF BEND	SCALE NTS
REV	DATE		STANDARD DRAWING	DATE 12/10/21
		WILLIAM	710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	LOCAL STREET CURB EXTENSIONS	STD DWG R-26

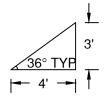
01/14/2022 1:14:02 PM (W-2 ND PARKING BAYS W-2 SEE NOTES BELOW ROW/PROPERTY LINE **MULTI-USE PATH** ROW/PROPERTY LINE **BIKE LANE** MULTI-USE PATH COLLECTOR STREET **BIKE LAN LUMINAIRE ROW/PROPERTY LINE ROW/PROPERTY LINE SIDEWALK** SIDEWALK S LOCAL STREET (SHOWN AS 32' WIDE) STOP/STREET SIGNS CW-SC **LUMINAIRE** 

- 1. PARKING BAYS SHALL BE DESIGNED OUTSIDE THE CLEAR VISION OF THE INTERSECTION. PARKING WILL BE PERMITTED IF CLEAR VISION AND SIGHT DISTANCE AS ANALYZED AS SAFE BY A PROFESSIONAL ENGINEER.
- 2. PARKING BAYS ON COLLECTORS ARE PERMITTED AS DIRECTED BY THE DEVELOPMENT CODE.
- 3. NO MORE THAN 10 PARKING BAYS WILL BE PERMITTED TOGETHER. TERMINATION OF BAYS WILL BE FOR VEGETATION PLANTING, UTILITY INSTALLATION (FRANCHISE UTILITY VAULTS, STORM FACILITIES, ETC).
- 4. PARKING IS NOT PERMITTED WITHIN THE INTERSECTION'S CLEAR VISION AND SIGHT DISTANCE AS DÉTERMINED BY AASHTO REQUIREMENTS AND ENGINEER REVIEW.

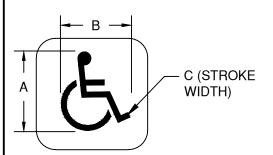
	CITY OF BEN	COLLECTOR / LOCAL INTERSECTION	STD DWG R-27
		710 NW WALL ST., BEND, OREGON 97701	APPR
REV	DATE		DATE 12/10/21
		STANDARD DRAWING	
_	NN AJD ROADWAY	CITY OF BEND	SCALE NTS



## **ANGLED PARKING PLAN**



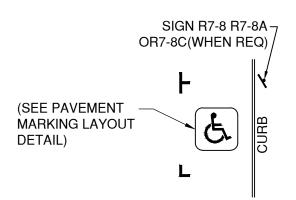
ACCESS AISLE ANGLE LAYOUT



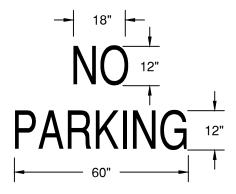
LEGEND	DIMENSIONS (INCHES)				
LLGLIND	Α	В	С		
MINIMUM	28	24	3		
STANDARD	41	36	4		

# **PAVEMENT MARKING LAYOUT**

#### NOTE:



**PARALLEL PARKING PLAN** 



- 1. THIS IS ONE EXAMPLE OF AN ACCESSIBLE PARKING CONFIGURATION. REFER TO ODOT ACCESSIBLE PARKING STANDARDS FOR ADDITIONAL DETAILS AND OTHER CONFIGURATIONS.
- 2. ALL SIGNS AND PLACEMENT SHALL CONFORM TO ODOT STANDARDS.

DRAWN AJD		CITY OF BEND	SCALE NTS
REV DATE		STANDARD DRAWING	DATE 12/10/21
		710 NW WALL ST., BEND, OREGON 97701	APPR
	CITY OF BEND	ACCESSIBLE PARKING - ANGLE	STD DWG R-29

PARABOLIC CROV'. 2.9" 2.8 (TOLERANCE 0.5"±) 0.8 **HOT POURED** HOT POURED JOINT SEAL JOINT SEAL 2.0" 2.0" 4'-0" GRIND -12" 12" 12" 12" 12" 12" 7'-0" **SECTION** LEVEL 3, 3" DENSE HOT MIX ASPHALT W PROFILE VIEW 2' (TYP), OR 4' 14'-0" WHERE NO OTHER SB 250' ACCESSIBLE ROUTE  $\mathsf{MAX}$ CURB: STREET CENTERLINE OR CENTERLINE STRIPE HOT POURED JOINT SEAL **ENTIRE PERIMETER** CURB STORMWATER DRAINAGE SHALL BE MAINTAINED TO ፍ AN APPROVED DISCHARGE. **PLAN VIEW** W В В 28' 12' 12' 11' 24" MIN TACK COAT 12' 30' 7' 12.5' 11.5' 7' 2.0' 32' 13' 12' 13' 34' 12.5' 7' SLOPE 13' 14' 36' 13' 13' 15' CURB FACE **PARKING PARKING** ONE SIDE **BOTH** 



1. SPEED HUMPS ARE ONLY PERMITTED IN SELECT LOCATIONS. REFER TO CITY DESIGN STANDARDS.

SIDES

24" GRIND

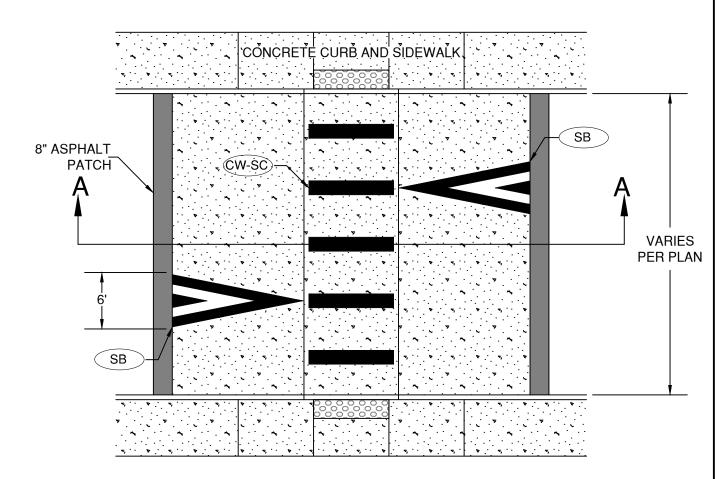
2. WHERE SPEED HUMP IS A RETRO-FIT TO AN EXISTING ROAD:

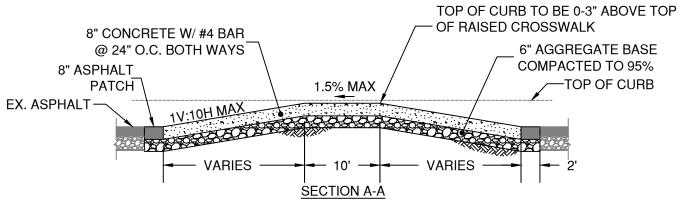
CROSS SECTION AT CURB

- 2.1. GRIND / KEY-IN PERIMETER TO THE DIMENSIONS SHOWN OR AS DIRECTED BY THE ENGINEER.
- 2.2. APPLY TACK COAT TO ALL EXISTING SURFACES WHERE SPEED HUMP WILL BE IN CONTACT.
- 3. HOT POURED JOINT SEAL THE ENTIRE PERIMETER AFTER INSTALLATION.
- 4. ALL VERTICAL DIMENSIONS HAVE A REQUIRED MAXIMUM TOLERANCE OF +/- 1/4".
- 5. THE DISTANCE BETWEEN CURB AND EDGE OF THE SPEED HUMP VARIES. SEE ENGINEERED PLANS.
- 6. PAVEMENT MARKINGS ON SPEED BUMP SHALL BE INSTALLED CONCURRENTLY WITH THE ASPHALT STRUCTURES. PAVEMENT MARKINGS SHALL BE THERMO-PLASTIC.
- 7. PAVEMENT MARKINGS SHALL BE INSTALLED BEFORE OPENING ANY LANE TO TRAFFIC THAT IS OCCUPIED BY A NEW SPEED BUMP.
- 8. SPEED HUMPS ARE NOT PERMITTED IN ACCESSIBLE ROUTES OR WHERE IN CONFLICT WITH DRIVEWAYS.

DRA	WN AJD ROADWAY	(FD)	CITY OF BEND	SCALE NTS
REV		(8HD)	STANDARD DRAWING	DATE 12/10/21
		VUI)	710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	SPEED HUMPS AND SHARROW PLACEMENT	STD DWG R-32

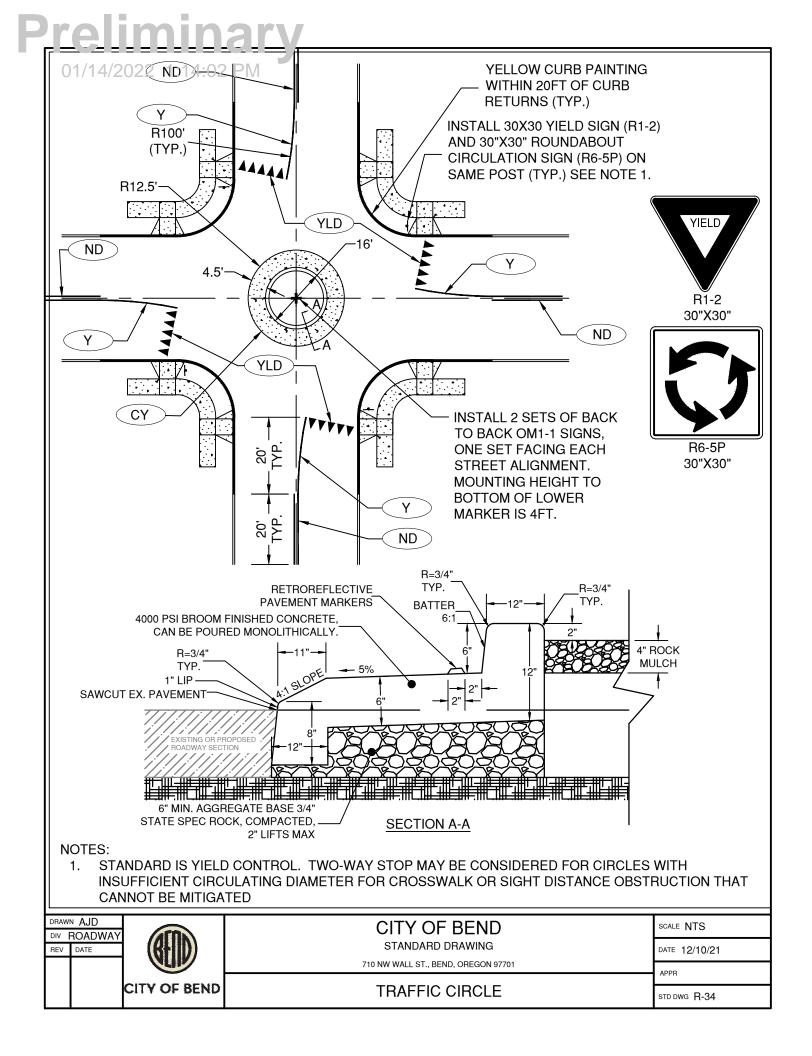
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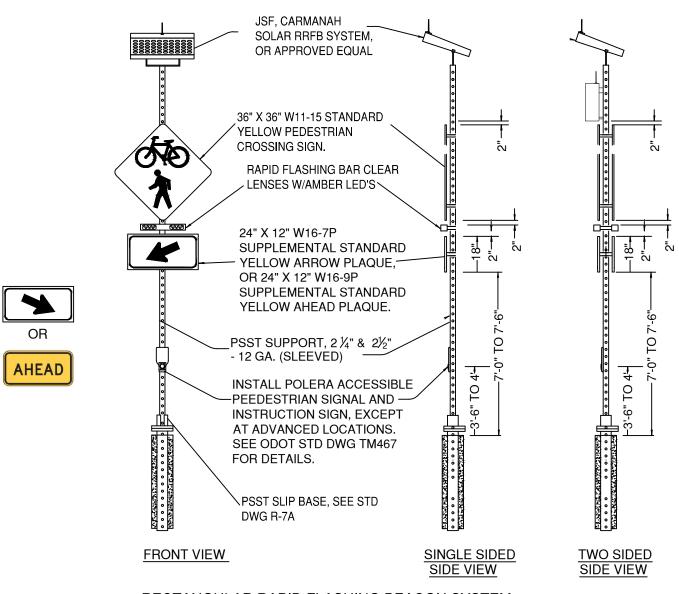


- 1. RAISED CROSSWALKS ARE ONLY PERMITTED IN SELECT LOCATIONS. REFER TO CITY DESIGN STANDARDS.
- 2. HOT POURED JOINT SEAL THE ENTIRE PERIMETER AFTER INSTALLATION.
- 3. PAVEMENT MARKINGS ON RAISED CROSSWALKS SHALL BE THERMO-PLASTIC.
- 4. PAVEMENT MARKINGS SHALL BE INSTALLED BEFORE OPENING ANY LANE TO TRAFFIC THAT IS OCCUPIED BY A NEW SPEED BUMP.

_	VN AJD ROADWAY	CITY OF BEND	SCALE NTS
REV	DATE (R-1)	STANDARD DRAWING	DATE 12/10/21
	Will be a second of the second	710 NW WALL ST., BEND, OREGON 97701	APPR
	CITY OF BEND	RAISED CROSSWALK	STD DWG R-33



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# RECTANGULAR RAPID FLASHING BEACON SYSTEM PSST INSTALLATION

- 1. REMOVE SOLAR EQUIPMENT IF USING COMMERCIAL POWER
- 2. ADD RADIO NETWORK CONTROLLER FOR WIRELESS EQUIPMENT IF
- 3. USE SCHOOL CROSSING (S1-1) FOR DESIGNATED SCHOOL CROSSING

_	ROADWAY		CITY OF BEND	SCALE NTS
REV	DATE	<b>i)</b> ))	STANDARD DRAWING	DATE 12/10/21
	An An		710 NW WALL ST., BEND, OREGON 97701	APPR
	CITY OF	PEND	DECTANOLII AD DADID EL ACUINO DE ACON	ALLIN
	CITY OF	DENU	RECTANGULAR RAPID FLASHING BEACON	STD DWG R-35

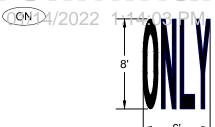
W-2 4" WHITE LINE 8" WHITE LINE WB ) (DLL-2) -12'-40'--40' 30'-8" WHITE DOTTED LANE LINE 4" WHITE BROKEN LINE (WD WD-2 4" WHITE DOTTED LINE 8" WHITE DOTTED LINE For lane extensions For lane extensions (NDW) (WRAB) 4" space-8" WHITE DOTTED ROUNDABOUT **CIRCULATING LINE** NARROW DOUBLE NO-LANE CHANGE INSTALL AS TYPE B-HS PREFORMED TWO 4" WHITE LINES THERMOPLASTIC DRAWN AJD CITY OF BEND SCALE NTS DIV ROADWAY STANDARD DRAWING REV DATE DATE 12/10/21 710 NW WALL ST., BEND, OREGON 97701 APPR CITY OF BEND **PAVEMENT MARKINGS - WHITE** STD DWG R-40

YB 40' 30' 4" YELLOW BROKEN LINE 4" YELLOW LINE D ( YD 1' space - 4 For left turn lane (thru traffic side⊏ 4 For Centerline **DOUBLE NO-PASS** 4" YELLOW DOTTED LINE TWO 4" YELLOW LINES For lane extensions (NPR) ND 4" space 4" space Increasing Stationing Thru traffic side **NO-PASS RIGHT** NARROW DOUBLE NO-PASS TWO 4" YELLOW LINES 4" YELLOW LINES T..... (NPL) (TWL -30 4" space-4" space-30' 40' Thru Traffic Side □ Increasing Stationing TWO-WAY LEFT TURN 4" YELLOW LINES **NO-PASS LEFT** 4" YELLOW LINES SEE R-44 FOR ARROW PLACEMENT DRAWN AJD CITY OF BEND SCALE NTS DIV ROADWAY STANDARD DRAWING REV DATE DATE 12/10/21 710 NW WALL ST., BEND, OREGON 97701 APPR CITY OF BEND **PAVEMENT MARKINGS - YELLOW** STD DWG R-41

S STOP BAR STANDARD CROSSWALK TWO 1' WHITE BARS 1' WHITE BAR Install per Standard Drawing R-47 Install stop bar in Thermoplastic. Install per Standard Drawing R-45 3' min. to 5' max. Direction of Traffic (CW-SC) (TS-(X)) (adjust spacing 4" white edge line to miss wheel tracks) Varies Varies 2' min. 2' min. min. angle orientation Edge of pavement for field layout STAGGERED CONTINENTAL CROSSWALK TRANSVERSE SHOULDER BARS 2' WHITE BARS 1' WHITE BARS AT 20' SPACING Install per standard drawing R-47; Install as Type B-HS preformed thermoplastic; X = 20', Typical (40' spacing may be used where median length exceeds 200') Install at uncontrolled approach Direction of Traffic of (TM-(X))BUF Narrow Double 3' Yellow Line 4.5' Min W-2 min. 3'+ BUFFER W-2 angle orientation for field layout angle orientation Narrow Double for field layout Yellow Line 2.5' TRANSVERSE MEDIAN BARS 2' BUFFER BETWEEN BIKE LANE AND PARKING 1' YELLOW BARS AT 20' SPACING **BUFFER STRIPE** X = 20', Typical (40' spacing may be used where median length exceeds 200') Install buffer stripes in thermoplastic / horizontal stripes parallel with traffic in paint (BUFP) Direction of Traffic □ W-2 **PARKING** W 2' **BIKE LANE** PARKING PROTECTED BIKE LANE DRAWN AJD CITY OF BEND SCALE NTS DIV ROADWAY STANDARD DRAWING REV DATE DATE 12/10/21 710 NW WALL ST., BEND, OREGON 97701 APPR CITY OF BEND

**PAVEMENT MARKINGS** 

STD DWG R-42A



# ONLY (white)

Center marking within lane width
Install in Type B - HS Preformed Thermoplastic
For letter proportion details, see current version of FHWA Standard Highway Signs

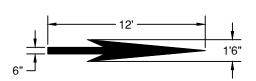
SCH



SCHOOL (white)

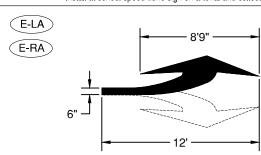
Center marking within lane width
Install in Type B - HS Preformed Thermoplastic
For letter proportion details, see current version of FHWA Standard Highway Signs
Install at school speed zone sign on arterial and collector roads

(E-SA)



# **ELONGATED STRAIGHT ARROW (white)**

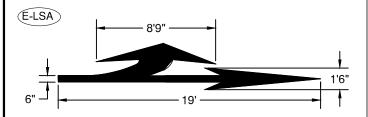
For arrow proportion details, see current version of FHWA Standard Highway Śigns Install in Type B - HS Preformed Thermoplastic Center marking within lane width



# **ELONGATED TURN ARROW (white)**

For arrow proportion details, see current version of FHWA Standard Highway Signs Install in Type B - HS Preformed Thermoplastic Center marking within lane width

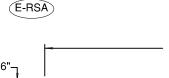
Use E-LA for Left Turn and E-RA for right turn.



# ELONGATED LEFT TURN STRAIGHT ARROW

(white)

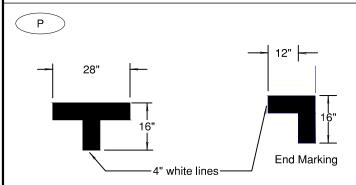
For arrow proportion details, see current version of FHWA Standard Highway Signs Install in Type B - HS Preformed Thermoplastic Center marking within lane width



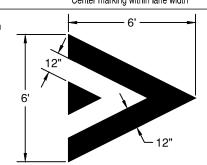
# ELONGATED RIGHT TURN STRAIGHT ARROW

(white)

For arrow proportion details, see current version of FHWA Standard Highway Signs
Install in Type B - HS Preformed Thermoplastic
Center marking within lane width



ON-STREET PARKING DETAIL (white)



# SPEED BUMP MARKING (WHITE)

Install in Type B - HS Preformed Thermoplastic Center marking within lane width

DRAWN AJD
DIV ROADWAY
REV DATE



# CITY OF BEND

SB

STANDARD DRAWING

710 NW WALL ST., BEND, OREGON 97701

**PAVEMENT MARKINGS** 

SCALE NTS

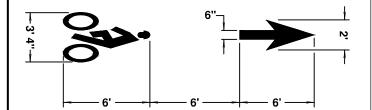
DATE 12/10/21

1'6"

APPR

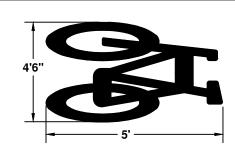
STD DWG R-42B





# **BIKE LANE STANDARD STENCIL (white)**

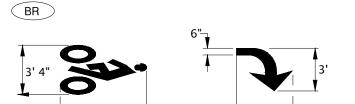
Center marking within lane width For proportion details, see current version of FHWA Standard Highway Signs



В

# **BIKE SYMBOL (WHITE)**

Install in Type B - HS Preformed Thermoplastic Center marking within lane width

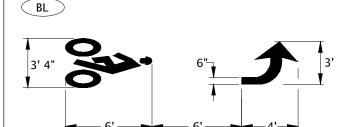


# BIKE RIGHT TURN STENCIL (white)

6'

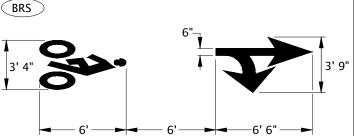
-4'**->** 

Center marking within lane width For proportion details, see current version of Standard Highway Signs



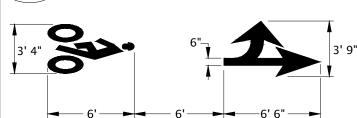
# BIKE LEFT TURN STENCIL (white)

Center marking within lane width For proportion details, see current version of Standard Highway Signs



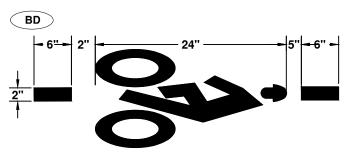
# BIKE RIGHT TURN STRAIGHT STENCIL (white)

Center marking within lane width For proportion details, see current version of Standard Highway Signs



# BIKE LEFT TURN STRAIGHT STENCIL (white)

Center marking within lane width For proportion details, see current version of Standard Highway Signs



Install in Type B - HS Preformed Thermoplastic Place marking in optimal location for bicycle to actuate the traffic signal.

BD	BD
2"	<u> </u>
BIKE DETECTOR (WHITE)	

# DRAWN AJD DIV ROADWAY DATE

REV

CITY OF BEND

# CITY OF BEND

BLS

STANDARD DRAWING

710 NW WALL ST., BEND, OREGON 97701

**PAVEMENT MARKINGS - BIKE** 

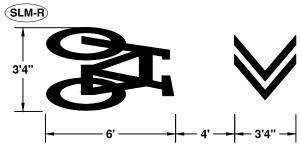
SCALE NTS
DATE 12/10/21
APPR

STD DWG R-43



Install in Type B - HS Preformed Thermoplastic Locate marking per R-32

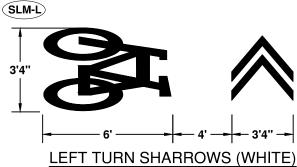
Arrow may be turned in direction of travel.



RIGHT TURN SHARROWS (WHITE)

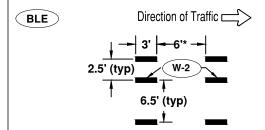
Install in Type B - HS Preformed Thermoplastic

Locate marking per R-32



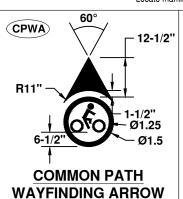
Install in Type B - HS Preformed Thermoplastic

Locate marking per R-32

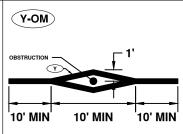


# **BIKE MARKING EXTENSION THROUGH INTERSECTION**

\* 6' or bike lane width



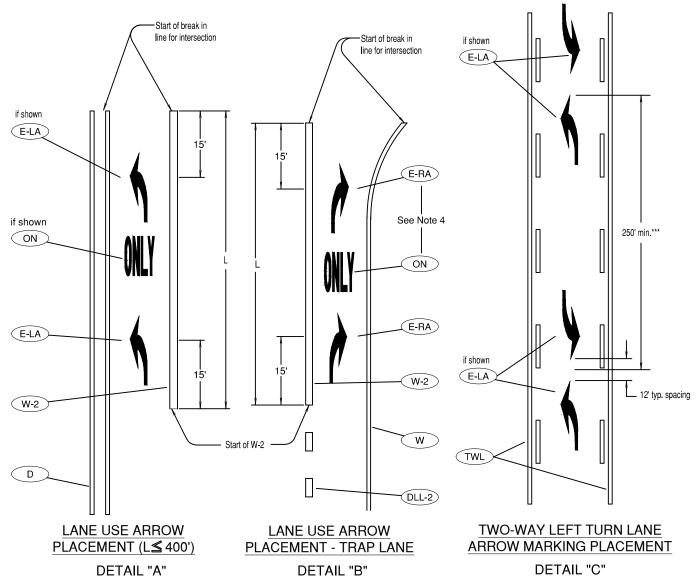
Black inner circle / Green ring / White arrow/bike symbol Arrow may be turned in direction of travel.



**YELLOW MARKING OBSTRUCTION IN PATH** 

_	<sup>™</sup> AJD ROADWAY	<b>AFTIN</b>	CITY OF BEND	SCALE NTS
REV	DATE	(GHID)	STANDARD DRAWING	DATE 12/10/21
		CITY OF BEND	710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	PAVEMENT MARKINGS - BIKE	STD DWG R-43A





#### General Notes:

- 1.) Center pavement marking legends within the lane.
- Placement of lane use arrows with respect to the 8" wide white line (W-2) channelization shown in details "A", "B" and "C" apply to both left and right turn lanes.
- 3.) When used for a short turn lane (<40'), the 2nd (downstream) arrow may be omitted
- 4.) An ONLY symbol is only required where a through lane approaching an intersection becomes a mandatory turn lane.

•

arrow at the midpoint of the turn lane.

When L is greater than 200', install 3rd lane use

To be accompanied by Standard Dwg. Nos. R-40 thru R-43

DIV ROADWAY
REV DATE

CITY OF BEND
STANDARD DRAWING
DATE 12/10/21
TO NW WALL ST., BEND, OREGON 97701

TURN LANE MARKING LAYOUT

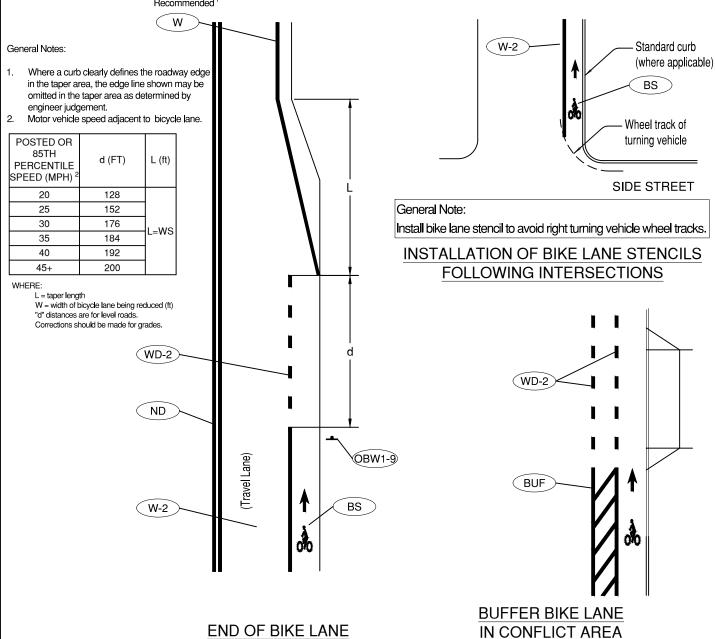
STD DWG R-44

BLE-G (ivp) or edge of roadway 6' TYPICAL ADJUST SPACING TO MISS WHEEL TRACK Color full width of lane W-2 (WD-2) Color full width of lane between dotted lines between dotted lines Varies Varies GREEN SUPPLEMENTED BICYCLE LANE GREEN SUPPLEMENTED BICYCLE LANE DOTTED LINE EXTENSION **SOLID LANE** W-2 WD-2 BS (BLE-G) 4' min BS **GRN** Optional **GRN** Optional E-RA TYPICAL GREEN SUPPLEMENTED BICYCLE LANE ACROSS AN ADDED RIGHT TURN LANE TAPER POSTED SPEED A\* (FT.) (MIN) (MPH) 35 AND LESS 40 30 45 Add 20 ft if BS odoes not preceed (GRN) (WD-2) BS ) (BLE-G) DLL-2 4' min SLM WD-2 GRN) Optional (BLE-G) (GRN) (E-RA) (E-RA) ON BS TYPICAL GREEN SUPPLEMENTED BICYCLE LANE AT A DROPPED RIGHT TURN LANE DRAWN AJD CITY OF BEND SCALE NTS DIV ROADWAY STANDARD DRAWING REV DATE DATE 12/10/21 710 NW WALL ST., BEND, OREGON 97701 APPR CITY OF BEND INTERSECTION BIKE SAFETY STD DWG R-44A

Preliminary
01/14/2022 1:14:03 PM

Recommended 1
W

General Notes:



To be accompanied by Standard Dwg. Nos. R-40 thru R-43 and R-44A

(FOR HIGH VOLUME COMMERCIAL DRIVEWAYS)

DRAWN AJD

DIV ROADWAY

REV DATE

CITY OF BEND

STANDARD DRAWING

APPR

CITY OF BEND

BIKE LANE MARKINGS

SCALE NTS

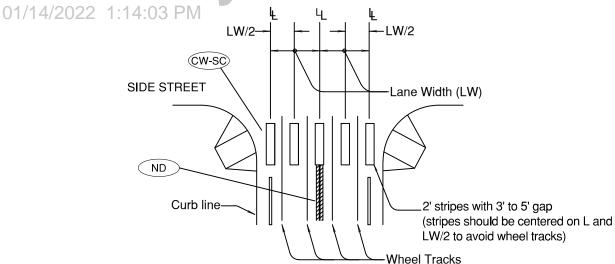
DATE 12/10/21

APPR

STD DWG R-44B

01/14/2022 1:14:03 PM S (CW-SC) -SIDEWALK SIDEWALK-(BLE-G) 20' MIN Optional (E-LA) (E-LA) ND W-2 ND Typical 2-way separated bicycle crossing Bicycle lanes yield controlled CW Recommended WD-2 Optional BLE-G Required S Recommended ND (WD-2) Optional GRN BLE-G CW BS Required CW Required ND Example separated bicycle lane markings at a signalized intersection DRAWN AJD CITY OF BEND SCALE NTS DIV ROADWAY STANDARD DRAWING REV DATE DATE 12/10/21 710 NW WALL ST., BEND, OREGON 97701 APPR CITY OF BEND **BIKE LANE MARKINGS** STD DWG R-44C

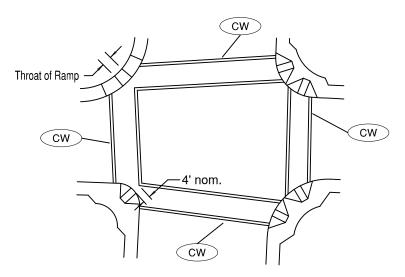
Stop bar required at stop control approaches on arterials and collector \* Stop bar shall be placed as near as possible to the intersecting traveled way. Locate stop bar 4' min. to 30' max. in advance of the extended fog line, edge of pavement, or curb face. Minimum stop bar distance may need to be increased, depending on location of pedestrian ramps (see Detail "A") and/or vehicle turn radii (see Detail "B"). Field verify sight distance and truck turning movements. Stop bar not required at local/local intersections. (NDY) S (NDY) (NDY) (W-2) 4' min. to 30 max. \* 4' min. to 30' max. STOP SIGN NDY PAVEMENT MARKINGS FOR TYPICAL INTERSECTION NOTE: Use W if <4' shoulder (no bike lane). Use W-2 if a bike lane exists. NDY S NDY NDY Place stop bar outside of S turning vehicle's swept path NDY Throat of ramp 2' to 3' from throat of ramp edge to stop bar Swept path of turning vehicle W2 Detail "B" Detail "A" STOP BAR PLACEMENT WITH STOP BAR PLACEMENT WITH RESPECT TO TURN RADII RESPECT TO PEDESTRIAN RAMPS WHERE NO RAMPS To be accompanied by Standard Dwg. Nos. R-40 thru R-43 DRAWN AJD CITY OF BEND SCALE NTS DIV ROADWAY STANDARD DRAWING REV DATE DATE 12/10/21 710 NW WALL ST., BEND, OREGON 97701 APPR CITY OF BEND INTERSECTION PAVEMENT MARKING LAYOUT STD DWG R-45



# STAGGERED CONTINENTAL LAYOUT

#### General Note:

 Install crosswalk bars such that the throat of the ADA ramp is entirely within crosswalk markings, or 5' back of extended fog line, edge of pavement, or curb face.



STANDARD CROSSWALK BARS
AT 4-WAY CONTROLLED
INTERSECTION

To be accompanied by Standard Dwg. Nos. R-40 thru R-43

01/14/2022 1:14:03 PM TRANSITION AT EDGE WITH NATIVE TOPSOIL AND NATIVE GRASS SEED SUITABLE TO THE SITE PAVED TRAIL 3" ASPHALT 4" BASE COURSE OF 5/8" MINUS AGGREGATE. EXISTING GRADE **CROSS SLOPE PATH TO** 8' MIN. **DRAIN AT 1.5%** 10' **VERTICAL TYPICAL WIDTH CLEARANCE** IF TRAIL IS USED AS SERVICE ACCESS, INCREASE **PAVING THICKNESS** SLOPE **ASPHALT OR** CONCRETE 2' MIN. 2' MIN. GRAVEL SHOULDER, PER NOTE 1 **GRAVEL SHOULDER** HORIZONTAL CLEARANCE AND AND HORIZONTAL DRAINAGE SWALE ON UPHILL SIDE. **CLEARANCE** PROVIDE DRAINAGE FEATURE PERIODICALLY TO ALLOW FOR COMPACTED NATIVE DRAINAGE.

> 20' MIN. EASEMENT WHERE OUTSIDE OF ROW (SEE STD DWG FOR TRAILS IN RIGHT OF WAY)

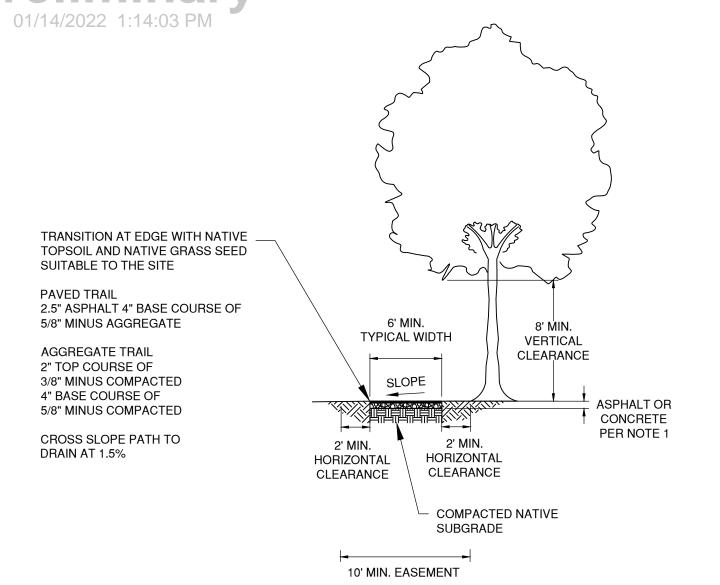
#### NOTES:

TRAIL SHALL BE PAVED IN THE RIGHT-OF-WAY OR ADJACENT TO STREETS. OUTSIDE OF THE RIGHT-OF-WAY TRAIL
MAY BE AGGREGATE AS APPROVED.

**SUBGRADE** 

- 2. PRIMARY TRAILS ARE TYPICALLY FACILITIES OUTSIDE OF THE PUBLIC RIGHT-OF-WAY THAT ARE OWNED AND MAINTAINED BY THE BEND PARKS AND RECREATION DISTRICT OR PRIVATELY. (SEE STANDARD CROSS-SECTIONS FOR CITY SHARED USE PATHS IN THE RIGHT-OF-WAY.)
- 3. WHERE OUTSIDE OF RIGHT-OF-WAY, TRAIL EASEMENT DEDICATION IS REQUIRED INCLUDING A PUBLIC ACCESS EASEMENT AND UTILITY EASEMENT WHERE APPLICABLE.
- PRIMARY TRAILS SHALL BE PAVED WITH CONCRETE OR ASPHALT. TRAIL ALIGNMENTS ARE ENCOURAGED TO MEANDER AND NOT BE DESIGNED AS FENCED CANYONS.
- 5. TRAILS WITHIN RIGHT-OF-WAY SHALL MEET PROWAG REQUIREMENTS. TRAILS OUT OF RIGHT-OF-WAY SHALL MEET THE REQUIREMENTS OF THE UNITED STATES ACCESS BOARD ACCESSIBILITY STANDARDS FOR FEDERAL OUTDOOR DEVELOPED AREAS.

_	N AJD ROADWAY	CITY OF BEND	SCALE NTS
_	DATE		DATE 12/10/21
		710 NW WALL ST., BEND, OREGON 97701	APPR
	CITY OF E	PRIMARY TRAIL	STD DWG R-48



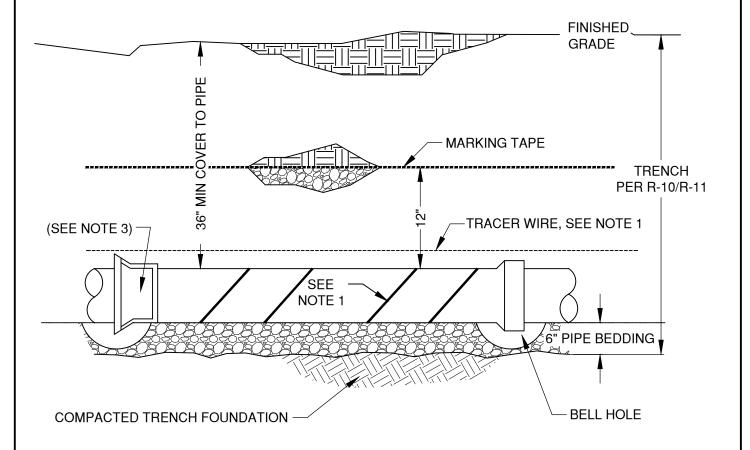
- TRAIL SHALL BE PAVED IN THE RIGHT-OF-WAY OR ADJACENT TO STREETS. OUTSIDE OF THE RIGHT-OF-WAY TRAIL
  MAY BE AGGREGATE AS APPROVED.
- 2. CONNECTOR TRAILS ARE TYPICALLY FACILITIES OUTSIDE OF THE PUBLIC RIGHT-OF-WAY THAT ARE OWNED AND MAINTAINED BY THE BEND PARKS AND RECREATION DISTRICT OR PRIVATELY. (SEE STANDARD CROSS-SECTIONS FOR CITY SHARED USE PATHS IN THE RIGHT-OF-WAY.)
- 3. WHERE OUTSIDE OF RIGHT-OF-WAY, TRAIL EASEMENT DEDICATION IS REQUIRED INCLUDING A PUBLIC ACCESS EASEMENT AND UTILITY EASEMENT WHERE APPLICABLE.
- 4. CONNECTOR TRAILS SHALL BE PAVED WITH CONCRETE OR ASPHALT.
- 5. TRAIL ALIGNMENTS ARE ENCOURAGED TO MEANDER AND NOT BE DESIGNED AS FENCED CANYONS.
- 6. NATIVE SURFACE TRAILS MAY BE USED WITHIN PARKS OR PRIVATE DEVELOPMENTS TO PROVIDE CONNECTIONS TO PRIMARY AND OTHER CONNECTOR TRAILS.
- 7. TRAILS WITHIN RIGHT-OF-WAY SHALL MEET PROWAG REQUIREMENTS. TRAILS OUT OF RIGHT-OF-WAY SHALL MEET THE REQUIREMENTS OF THE UNITED STATES ACCESS BOARD ACCESSIBILITY STANDARDS FOR FEDERAL OUTDOOR DEVELOPED AREAS.

		CITY OF BEND	CONNECTOR TRAIL	STD DWG R-49
			/10 NW WALL ST., BEND, OREGON 9//01	APPR
		(QTIIV)	710 NW WALL ST., BEND, OREGON 97701	12,10,21
-	DATE		STANDARD DRAWING	DATE 12/10/21
	N AJD ROADWAY		CITY OF BEND	SCALE NTS



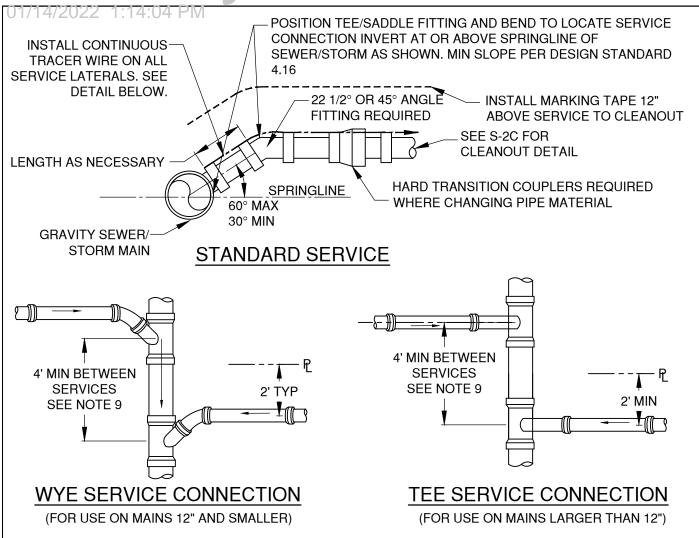
# CITY OF BEND STANDARD DRAWINGS Sanitary (S)

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- 1. FOR PRESSURE AND VACUUM SEWER MAINS ONLY, TRACER WIRE SHALL BE CENTERED ON TOP OF THE MAIN, AS CLOSE TO THE MAIN AS POSSIBLE. THE MAIN SHALL BE WRAPPED WITH MARKING TAPE A MIN OF 4 WRAPS PER 20 FEET OF MAIN. TRACER WIRE IS NOT REQUIRED ON GRAVITY SEWER MAIN.
- 2. PLACE TRACER WIRE ON GRAVITY, PRESSURE, AND VACUUM SEWER SERVICES. TRACER WIRE AND MARKING TAPE TO BE PER SPECIFICATION SECTION 00445.11.
- 3. TRANSITION FITTING SHALL BE A HARD COUPLER WHERE CHANGING PIPE MATERIAL
- 4. WHEN A SEWER LINE IS LOCATED ABOVE OR WITHIN 18" BELOW A WATERLINE, THE SEWER SHALL BE CONSTRUCTED WITH A MIN OF 20 LF OF AWWA C900 OR AWWA C905 PIPE CENTERED AT THE WATERLINE PER OAR 333-061-0050(9) AND BE APPROVED BY CITY/STATE.
- 5. WHEN INSTALLING A WATER LINE THAT CROSSES BELOW OR WITHIN 18 INCHES ABOVE A NON-POTABLE LINE, FOLLOW OAR 333-061-0050(9). ALL NON-POTABLE LINES SHALL BE TREATED AS "SEWER" LINES AS DESCRIBED IN OAR 333-061-0050(9).
- 6. COMPACTION SHALL MEET 00405.46(c) PER COB SPECIAL PROVISIONS

	N AJD SANITARY	(TD)	CITY OF BEND	SCALE NTS
-	DATE	(6HID)	STANDARD DRAWING	DATE 12/10/21
			710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	SEWER MAIN TYPICAL PROFILE	STD DWG S-1

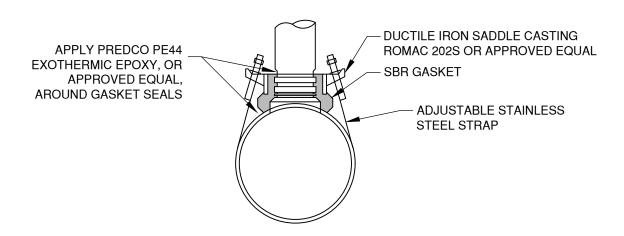


- 1. ALL TRENCHES TO CONFORM TO STD DWG R-10
- 2. SERVICES OFF NEW MAINS SHALL BE WYE OR TEE CONNECTIONS. SEE STD DWG S-2B FOR SERVICES OFF EXISTING MAINS
- 3. TRACER WIRE REQUIRED ON ALL SEWER / STORM SERVICES. MARKING TAPE SHALL BE INSTALLED AS SHOWN.
- 4. SEWER / STORM CONNECTION FROM THE PROPERTY LINE/ROW LINE TO THE CLEAN OUT NEAR THE BUILDING FOUNDATION REQUIRES A PLUMBING PERMIT.
- 5. WHEN A SEWER SERVICE IS LOCATED ABOVE OR WITHIN 18" BELOW A WATERLINE, THE SEWER SERVICE SHALL BE CONSTRUCTED WITH A MIN. 20 LF OF AWWA C900 OR AWWA C905 PIPE CENTERED AT THE WATERLINE PER OAR 333-061-0050(9).
- 6. STANDARD RESIDENTIAL SEWER SERVICES ARE 4"Ø. COMMERCIAL, INDUSTRIAL SEWER SERVICES ARE 6"Ø UNLESS OTHERWISE SIZED LARGER BY THE SITE'S ENGINEER.
- 7. WHERE A SERVICE CROSSES A NEW CURB, STAMP THE FACE OF CURB PER STD DWG R-3.
- 8. GRAVITY SEWER STANDARDS APPLY TO STORM SEWER MAINS.
- 9. MINIMUM 3' SECTIONS OF PIPE ARE REQUIRED BETWEEN FITTINGS.
- 10. ALL STORM SEWER LATERALS MUST COMPLY WITH CITY SEWER STANDARDS.

	<sup>™</sup> AJD SANITARY	(CD)	CITY OF BEND	SCALE NTS
REV	DATE	(GHID)	STANDARD DRAWING	DATE 12/10/21
			710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	GRAVITY SEWER/STORM SERVICES ON NEW MAINS	STD DWG S-2A



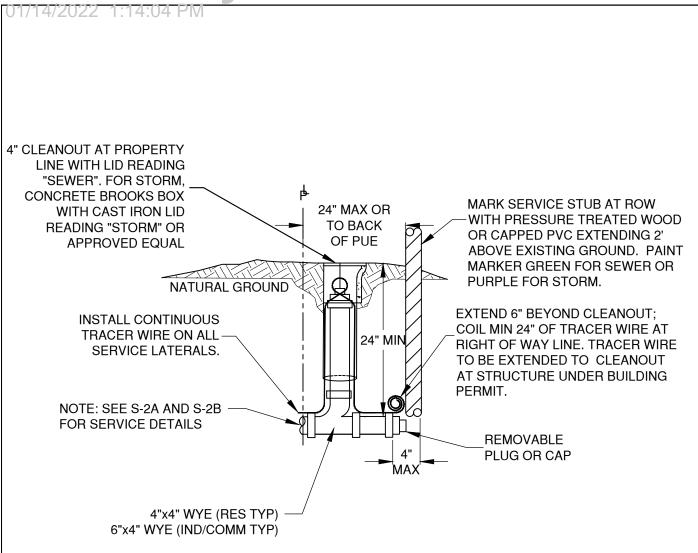
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# **SEWER SADDLE** FOR USE ON MAINS SMALLER 12"

- 1. INSTALL SERVICE LATERAL PER STD DWG S-2A
- CONNECTION TO EXISTING MAINS MAY BE CUT-IN FITTINGS PER STD DWG S-2A OR TAPS PER THIS DETAIL. PVC MAINS TO UTILIZE CUT IN FITTINGS.
- 3. SEWER SADDLE SHALL BE ROMAC STYLE "CB" OR APPROVED EQUAL.
- 4. INSTALL CONNECTION PER THE MANUFACTURER'S RECOMMENDATIONS.

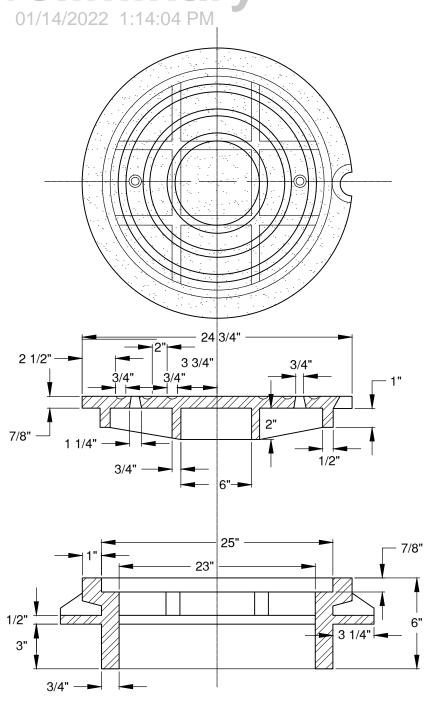
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		(U)	710 NW WALL ST., BEND, OREGON 97701	APPR
	C	ITY OF BEND	GRAVITY SEWER/STORM SERVICE CONNECTION TO EXISTING MAIN	STD DWG S-2B
			EXISTING WAIN	



# NOTES:

1. SEE STD DWG S-2A FOR GENERAL NOTES.

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RE	_	(BHID)	STANDARD DRAWING	DATE 12/10/21
		(UI)	710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	GRAVITY SEWER/STORM CLEANOUT	STD DWG S-2C





SEWER MANHOLE LID DETAIL NTS

- 1. CITY SANITARY SEWER MANHOLE COVERS SHALL HAVE THE WORD "SEWER" CAST IN 2" RAISED LETTERS.
- 2. PRIVATE MANHOLE LIDS SHOULD NOT USE THE CITY OF BEND MANHOLE LID DETAIL.
- 3. HINGED MANHOLE LIDS ARE NOT PERMITTED UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
- 4. LOCKS ARE TO BE USED ON THE LID WHEN THE LID IS LOCATED OUTSIDE A ROADWAY IF REQUIRED BY THE CITY ENGINEER.
- 5. MANHOLE LIDS SHALL BE PLACED OUTSIDE THE PATH OF TRAVEL ON SIDEWALKS AND DRIVEWAY APRONS.

_	N AJD SANITARY	(fn)	CITY OF BEND	SCALE NTS
REV	DATE	(GHID)	STANDARD DRAWING	DATE 12/10/21
		<b>ULIP</b>	710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	STANDARD SEWER MANHOLE RING & COVER	STD DWG S-3A

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# CITY OF BEND

STANDARD DRAWING

710 NW WALL ST., BEND, OREGON 97701

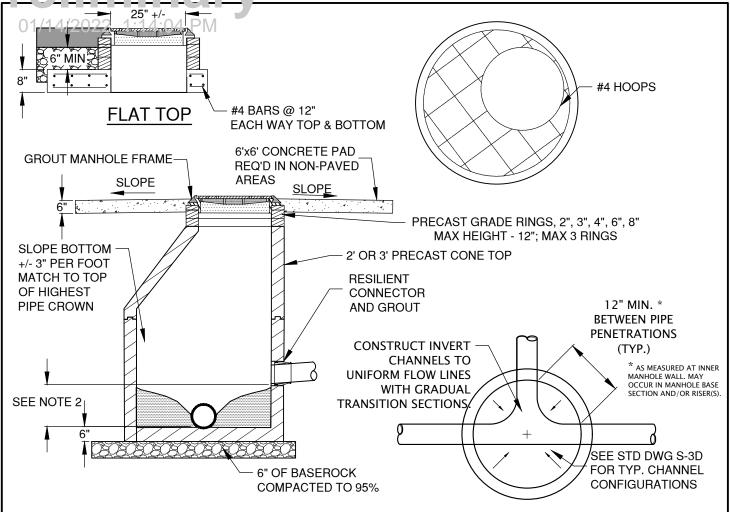
COMPOSITE MANHOLE FRAME AND COVER

SCALE NTS

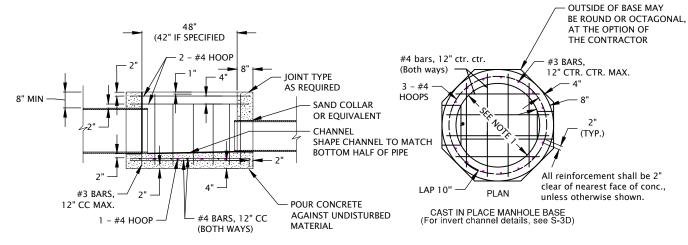
DATE 12/10/21

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STD DWG S-3B



# STANDARD MANHOLE WITH PRECAST BASE



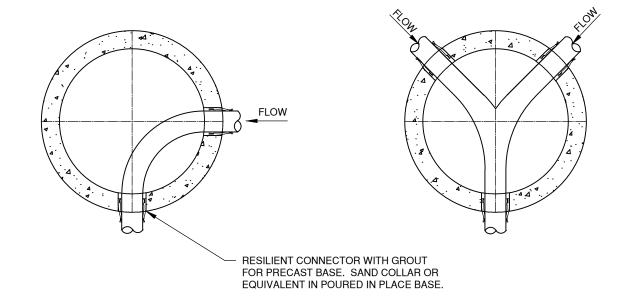
# CAST IN PLACE MANHOLE BASE

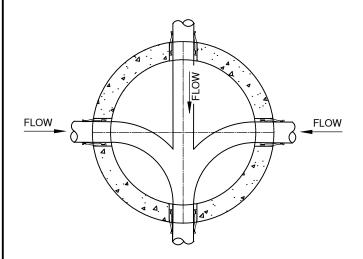
#### GENERAL NOTES:

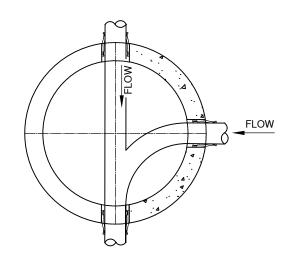
- 1. MANHOLE DIAMETER PER CITY OF BEND DESIGN STANDARDS.
- THE MAXIMUM INTERNAL DROP IS 1' FOR PIPES 8" IN DIAMETER OR LESS AND 2' FOR PIPES GREATER THAN 8" IN DIAMETER. SEE DWGS S-4 AND S-4A FOR LARGER DROPS.
- 3. ALL GROUT USED ON MANHOLES SHALL BE NON-SHRINK

_	RAWN A	AJD NITARY	(CD)	CITY OF BEND	SCALE NTS
-		ATE	(GHID)	STANDARD DRAWING	DATE 12/10/21
			(III)	710 NW WALL ST., BEND, OREGON 97701	APPR
L			CITY OF BEND	STANDARD SEWER/STORM MANHOLE	STD DWG S-3C

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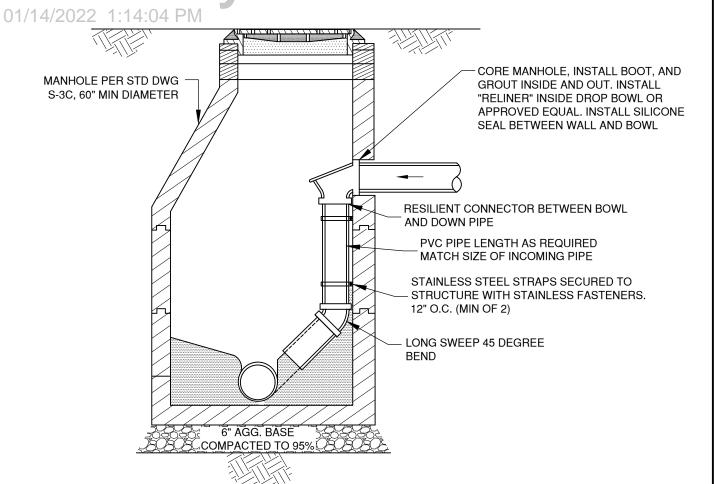


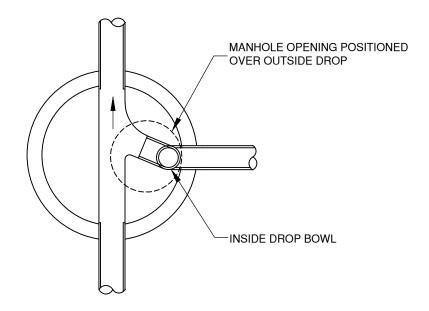
## **GENERAL NOTES:**

- 1. FLOW CHANNELS DEVIATING FROM THE STANDARD CHANNELS REQUIRE A DETAIL FOR APPROVAL FROM THE ENGINEER
- 2. WIDTH OF CHANNEL SHOULD MATCH THE INSIDE DIAMETER OF INCOMING AND OUTGOING PIPES.
- 3. CHANNEL LINING SHALL BE BLENDED FOR SMOOTH CONTOUR BETWEEN PIPES.
- 4. GROUT CHANNEL TO SMOOTH FINISH.
- 5. FINISH BOTTOM TO EVEN SLOPE BROOM FINISH TO DRAIN TO CHANNEL.
  6. LOCATE MANHOLE OPENING OPPOSITE OUTLET UNLESS OTHERWISE DIRECTED.

_	N AJD SANITARY	(ff)	CITY OF BEND	SCALE NTS
REV	DATE	(({{\frac{1}{2}}}))	STANDARD DRAWING	DATE 12/10/21
		<b>CLIP</b>	710 NW WALL ST., BEND, OREGON 97701	APPR
		01717 05 05110		74.7.11
		CITY OF BEND	TYPICAL MANHOLE INVERT LAYOUT	STD DWG S-3D

-MAIN SIZE OVER 12" MANHOLE PER STD DWG S-3C, 60" MIN **DIAMETER OUTSIDE-DROP ASSEMBLY** SAME SIZE AS MAIN CLASS "B" BACKFILL COMPACTED IN 6" LIFTS BY HAND TAMPERS FULL WIDTH OF TRENCH TO UNDISTURBED EARTH 6" OF BASEROCK COMPACTED TO 95% **ENCASE 90° BEND IN LONG SWEEP 90 CONC 6" MIN DEPTH** DEGREE BEND ALL AROUND BASE MANHOLE OPENING POSITIONED OVER OUTSIDE DROP CONCRETE ENCASEMENT 6" MIN DEPTH ALL AROUND 6" INVERT CHANNEL PER STD DWG S-3D **GENERAL NOTES:** OUTSIDE DROP MANHOLE FOR USE WITH MAIN SIZE OVER 12" ONLY DRAWN AJD SCALE NTS CITY OF BEND DIV SANITARY STANDARD DRAWING REV DATE DATE 12/10/21 710 NW WALL ST., BEND, OREGON 97701 APPR CITY OF BEND STANDARD OUTSIDE DROP - LARGER THAN 12" PIPE STD DWG S-4

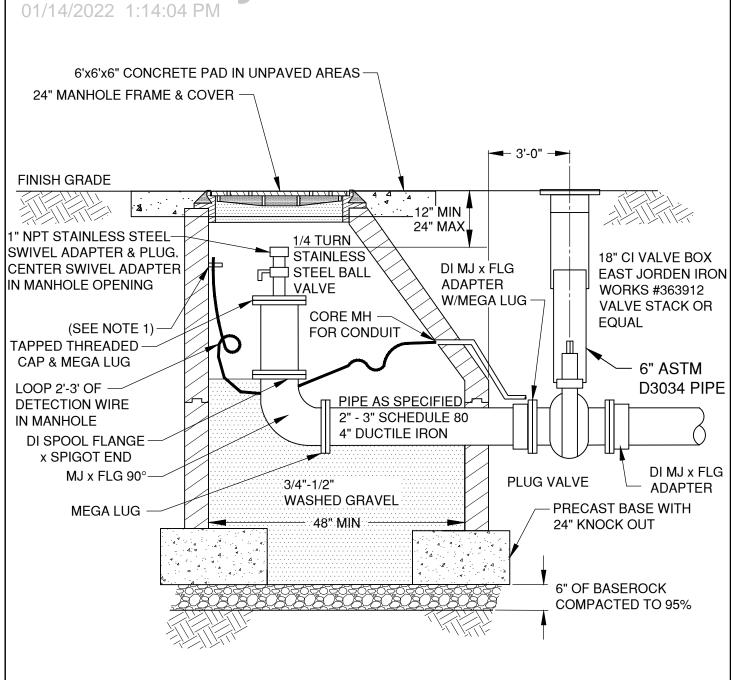




#### NOTES:

1. INSIDE DROP MANHOLE FOR USE WITH MAIN SIZE 12" AND SMALLER ONLY

_	N AJD SANITARY	<b>AFR</b>	CITY OF BEND	SCALE NTS
REV	DATE	(({{}}-   ))	STANDARD DRAWING	DATE 12/10/21
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		CITY OF BEND	OTANDADD INCIDE DOOD . (OILDIDE AND OMALLED	ATT
		CITY OF BEND	STANDARD INSIDE DROP - 12" PIPE AND SMALLER	STD DWG S-4A

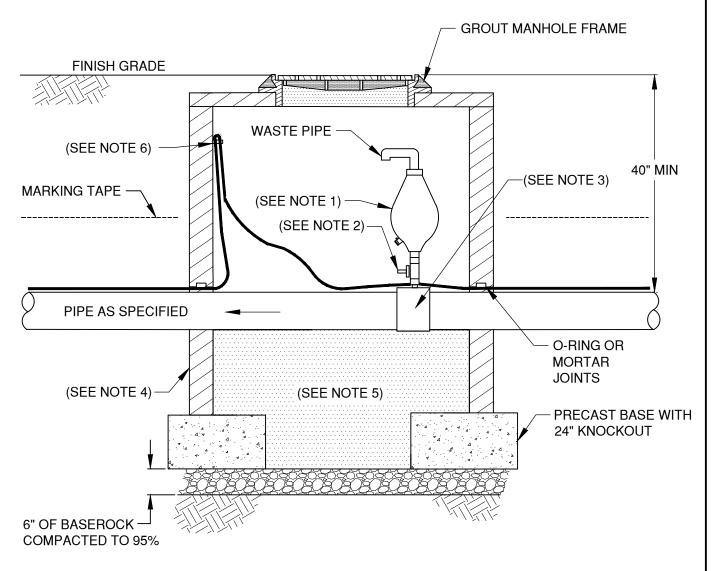


#### NOTES:

1. TRACER WIRE SHALL BE EXTENDED WITHIN 18-INCHES OF FINISHED GRADE OR 6" BELOW LOWEST GRADE RING, WHICH EVER IS GREATER, TO A 1.75-INCH STAINLESS STEEL RUBBER CUSHIONED CLAMP MOUNTED TO MANHOLE WITH AS MIN 1/4" X 1-3/4" CONCRETE ANCHOR SCREW.

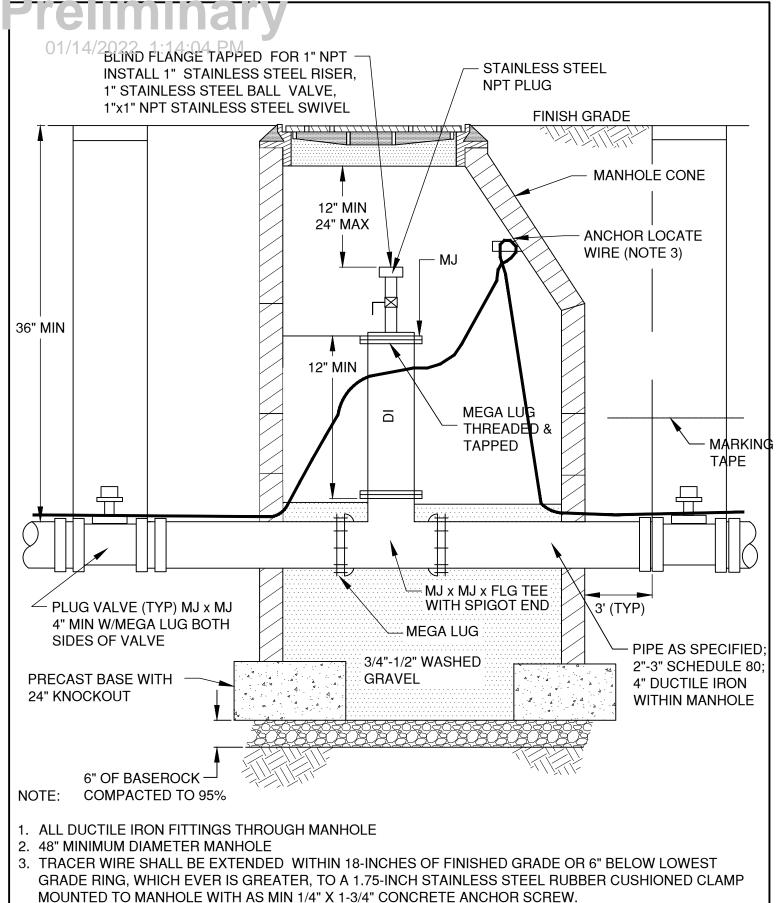
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RE	i	(GHID)	STANDARD DRAWING	DATE 12/10/21
			710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	3" & 4" PRESSURE SEWER LINE TERMINATION CLEANOUT	STD DWG S-5

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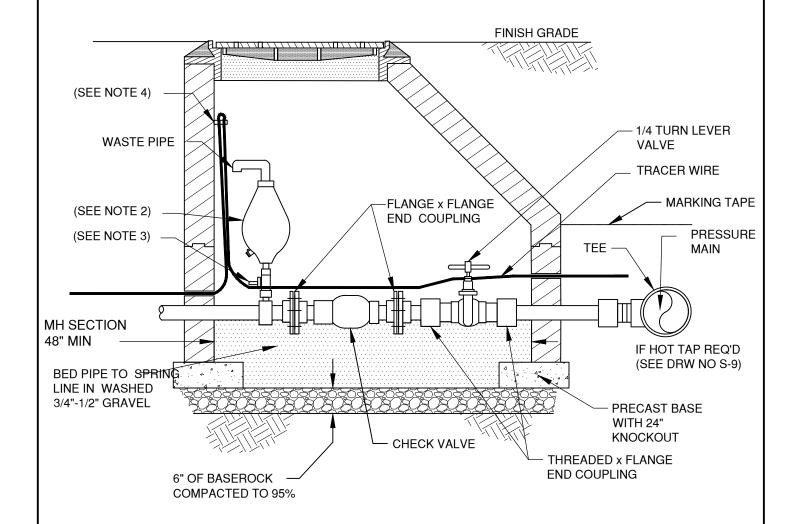
- 1. 2" COMBINATION AIR VALVE(SHORT VERSION) PER. 00445.11(I)(2)(d)
- 2. 2" STAINLESS STEEL BALL VALVE
- 3. 2" TEE OR 2" SADDLE TEE AS APPROVED FOR PRESSURE APPLICATIONS
- 4. 48" DIAMETER FLAT TOP MANHOLE.
- 5. 3/4"-1/2" WASHED GRAVEL
- 6. TRACER WIRE SHALL BE EXTENDED WITHIN 18-INCHES OF FINISHED GRADE OR 6" BELOW LOWEST GRADE RING, WHICH EVER IS GREATER, TO A 1.75-INCH STAINLESS STEEL RUBBER CUSHIONED CLAMP MOUNTED TO MANHOLE WITH AS MIN 1/4" X 1-3/4" CONCRETE ANCHOR SCREW.

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RE\	ì	( <del>(  [   [   [   [   [   [   [   [   [   [</del>	STANDARD DRAWING	DATE 12/10/21
			710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	AIR RELEASE/VAC BREAKER PRESSURE SEWER MH	STD DWG S-6



_	WN AJD SANITARY	AFRA.	CITY OF BEND	SCALE NTS
REV	i	(GHID)	STANDARD DRAWING	DATE 12/10/21
			710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	MAIN LINE CLEANOUT PRESSURE SEWER	STD DWG S-7

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## TYPICAL INSTALLATION IN TRAFFIC AREA

#### NOTE

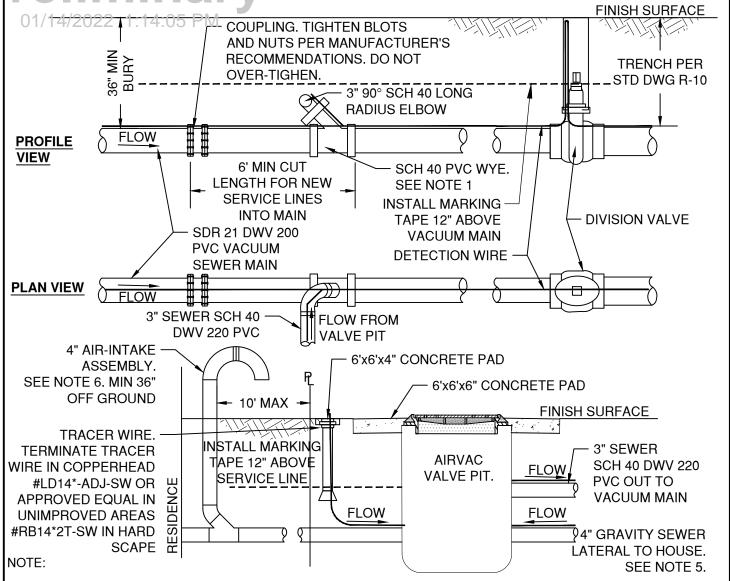
- 1. SHOWN WITH PLUG VALVE IN ENCLOSURE
- 2. 2" COMBINATION AIR VALVE (SHORT VERSION) PER. 00445.11(I)(2)(d)
- 3. 2" STAINLESS STEEL BALL VALVE
- 4. TRACER WIRE SHALL BE EXTENDED WITHIN 18-INCHES OF FINISHED GRADE OR 6" BELOW LOWEST GRADE RING, WHICH EVER IS GREATER, TO A 1.75-INCH STAINLESS STEEL RUBBER CUSHIONED CLAMP MOUNTED TO MANHOLE WITH AS MIN 1/4" X 1-3/4" CONCRETE ANCHOR SCREW.

_	N AJD SANITARY	(In)	CITY OF BEND	SCALE NTS
REV	DATE		STANDARD DRAWING	DATE 12/10/21
			710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	PRESSURE SEWER SERVICE - TRAFFIC AREA	
			FRESSORE SEWER SERVICE - TRAIT IC AREA	STD DWG S-8

01/14/20(SEE NOTE: 0)5 PM **OPEN VALVE PRIOR TO** P BACKFILLING THE STREET 1/4 TURN HAND LEVER -24" -FINISH SURFACE MARKING TAPE SCHEDULE 80 UNION TRACER WIRE **24**"-36" (SEE STD DWG S-1) **GLUED CAP** 12" **PVC** PRESSURE MAIN **SCHEDULE** 2" & 3" ROMAC 202S 80 UNION PLUG VALVE 4" & LARGER ROMAC SCH 80 NIPPLE SST TAP SLEEVE SCH 80 NIPPLE BRASS CHECK VALVE -**BRASS OR STAINLESS** SEE NOTE 4 STEEL NIPPLE HOT TAP DETAIL BALL VALVE; OPEN VALVE; REMOVE HANDLE SERVER BOX & COVER ASSEMBLY ARMORCAST #1974TAPCX24 OR CHRISTY #SYN2436T (SEE NOTE 1) OR MID STATES 2436-24 1/4 TURN HAND LEVER FINISH SURFACE SCHEDULE 80 UNION -24"-36" MARKING TAPE **GLUED CAP** 12" TRACER WIRE **PVC** SCH 80 UNION -PLUG VALVE SCH 80 SCH 80 NIPPLE MARKING TAPE **NIPPLE** BRASS CHECK VALVE -**WYE OR** SEE NOTE 4 **TEE FITTING** SERVICE LINE PROFILE PRESSURE MAIN -NOTE: 2x4 SERVICE MARKER TO FULL DEPTH OF TRENCH. PROJECT END 2FT MINIMUM ABOVE FINISH GRADE & PAINT GREEN ALL AROUND 2. SERVICE BOX COVER MARKED "SEWER" 3. CHECK VALVES 3" & LARGER APCO 100. 2" LEGEND T451 4. SERVICE BOX AND ALL APPARATUSES WITHIN ARE PRIVATELY OWNED BUT REQUIRED TO BE INSTALLED WITH PRESSURE SEWER SERVICE DRAWN AJD CITY OF BEND SCALE NTS DIV SANITARY STANDARD DRAWING REV DATE DATE 12/10/21 710 NW WALL ST., BEND, OREGON 97701 APPR CITY OF BEND PRESSURE SEWER SERVICE - NON TRAFFIC AREA STD DWG S-9

01/14/2022 1:14:05 PM 24" MIN STANDARD **GROUT MANHOLE-SEWER MANHOLE FRAME** 6'x6'x6" CONCRETE PAD IN UNPAVED AREAS 48" MIN 2' OR 3' PRECAST ECCENTRIC CONE TOP OR FLAT TOP **BERM EARTH** AROUND MH IF NECESSARY NOT PERMITTED IN **SWALES OR** CHANNEL DRAINAGE AREAS 4" OR 6"Ø TO 6" SERVICE LINE PIPE WIDTH 48" DIA 5% MIN / 0.2' DROP (OR 2% MIN 2% MIN MATCH EXIST, PIPE SLOPE 5% MAX 5% MAX WHERE INSTALLED ON **EXISTING SERVICE LINE)** FLOW POURED IN PLACE BASE **6" MIN COMPACTED** (PRECAST BASE NOT ALLOWED) **BASE ROCK** SAND COLLAR POURED | PRECAST BASE IN PLACE BASE CITY STANDARD VALVE BOX -FLUSH TO GRADE. 'PORTLAND' R-0-W STYLE VALVE BOX. LID WITH RAISED "S" LETTER 6" PVC PLUG W/ **SQUARE NUT CONCRETE RING-**LONG SWEEP WYE. WHEN APPLICABLE 6" ASTM D3034 **PVC - ONE** 4"x4" CUT IN TEE SERVICE LINE CONTINUOUS W/ 4"x6" REDUCER FROM OIL/WATER **PIPE** OR SEPARATOR (WHEN APPLICABLE) 6"x6" CUT IN TEE MAIN LIN SERVICE LINE FLOW 9 FLOW SAMPLING TEE OPTION PROFILE VIEW (NOTE 3) 6" MIN 4" OR 6" SEWER SERVICE LINE FROM DOMESTIC WASTE FLOWS. WHERE TAP PER DRAWING S-2 INDUSTRIAL/COMMERICAL WASTE SEPARATION ISN'T REQUIRED UNDER PLUMBING CODE. A SINGLE SERVICE INTO THE MANHOLE WILL BE CONSTRUCTED. NOTES: 1. MULTIPLE SERVICE LINES SHALL CONNECT UPSTREAM AND OUTSIDE THE SAMPLE MANHOLE 2. SAMPLE MANHOLE TO BE LOCATED ON PRIVATE PROPERTY IN AN ACCESSIBLE AREA. 3. SAMPLING TEE OPTION IS ONLY PERMITTED WHEN APPROVED BY THE CITY ENGINEER AND ARE INTENDED FOR RETROFITS ON EXISTING SYSTEMS ONLY. CONSIDERED IN SITUATIONS WHERE EXISTING UTILITIES OR EASEMENTS PREVENT THE INSTALLATION OF MANHOLE. DRAWN AJD CITY OF BEND SCALE NTS DIV SANITARY





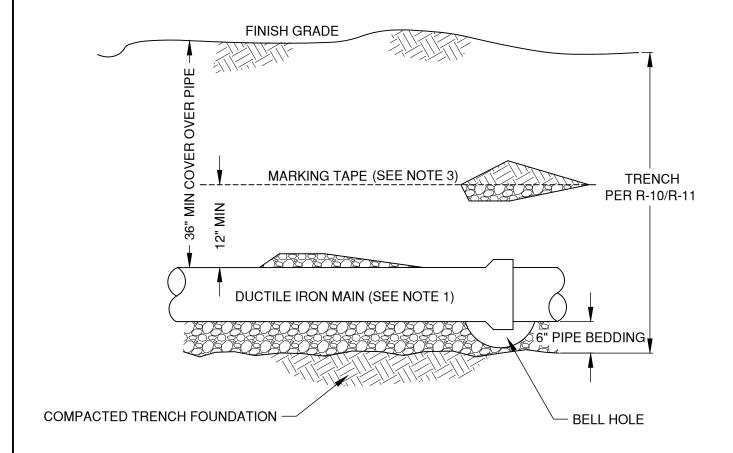
- 1. ALL WORK DONE ON A VACUUM SEWER SHALL BE COORDINATED WITH PUBLIC WORKS 7 DAYS IN ADVANCE TO COORDINATE VACUUM STATION SHUT DOWN.
- 2. ALL JOINTS TO BE CONNECTED USING STANDARD PRIMER AND SOLVENT CEMENT. KEEP ALL JOINTS CLEAN AND FREE OF DEBRIS. JOINTS TO BE SCH40 DWV 220 OR APPROVED EQUAL.
- 3. AFTER INSTALLATION IS COMPLETE, OPEN DIVISION VALVE AND PERFORM VISUAL AND AUDIBLE INSPECTION OF EACH JOINT FOR LEAKS PRIOR TO TRENCH CLOSURE.
- 4. TRENCH BACKFILL TO BE IN ACCORDANCE TO S-1. MARKING TAPE AND TRACER WIRE TO BE INSTALLED ON ALL MAINS AND SERVICES.
- 5. INSTALL GRAVITY SEWER LATERALS IN CONFORMANCE WITH PLUMBING CODE. SERVICE LINE FROM THE PIT TO THE HOUSE IS OWNED AND MAINTAINED BY PROPERTY OWNER. CONNECTIONS TO THE AIRVAC VALVE PIT SHALL BE MADE AS PER MANUFACTURER'S SPECIFICATION.
- 6. AIR-INTAKE SHALL BE INSTALLED IN CONFORMANCE TO THE PLUMBING CODE AND SHALL BE PERMITTED WITH THE BUILDING DEPARTMENT UNDER A PLUMBING PERMIT.
- 7. PIT TO BE INSTALLED OUTSIDE OF SIDEWALK AND APRON SURFACES IN ROW OR CITY EASEMENT.
- 8. ALL WORK SHALL CONFORM TO AIR VAC SPECIFICATIONS. NO MORE THAN TWO SERVICES MAY CONNECT TO A ONE VACCUM PIT.
- 9. CONNECTION AVAILABILITY TO VALVE PIT TO BE DETERMINED BY THE CITY ENGINEER BASED ON MANUFACTURERS ALLOWABLE FLOW INTO PIT AND THE VACUUM SYSTEM.

_	AWN AJD  SANITARY	(In)	CITY OF BEND	SCALE NTS
RI	i	( <b>6HID</b> )	STANDARD DRAWING	DATE 12/10/21
		<b>CLIP</b>	710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	VACUUM SEWER SERVICE	STD DWG S-16



# CITY OF BEND STANDARD DRAWINGS Water (W)

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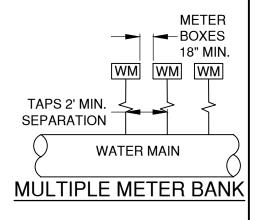
- 1. REFER TO SPECIFICATION SECTION 01140.41 FOR APPROVED PUSH-ON AND MECHANICAL JOINT RESTRAINT SYSTEMS.
- 2. WOOD BLOCKING IS NOT PERMITTED IN THE BACKFILLED TRENCH.
- 3. INSTALL MARKING TAPE ON ALL MAINS AND SERVICES PER SPECIFICATION SECTION 01140.10 AND 01140.45.
- 4. WHEN INSTALLING A WATER LINE THAT CROSSES BELOW OR WITHIN 18 INCHES ABOVE A NON-POTABLE LINE, FOLLOW OAR 333-061-0050(9). ALL NON-POTABLE LINES SHALL BE TREATED AS "SEWER" LINES AS DESCRIBED IN OAR 333-061-0050(9).
- 5. COMPACTION SHALL MEET REQUIREMENTS OF SPECIFICATION SECTION 00405.46(c)

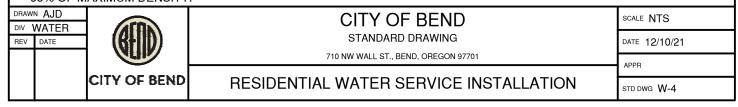
		CITY OF BEND	WATER MAIN TYPICAL PROFILE	STD DWG W-1
		(UI)	710 NW WALL ST., BEND, OREGON 97701	APPR
REV	DATE	(6111))	STANDARD DRAWING	DATE 12/10/21
	NATER	AFTIN	CITY OF BEND	SCALE NTS

01/14/2022 1:14:05 PM PROPERTY PIN REQUIRED FOR THE PROPER SETTING OF THE SERVICE LOCATION, INSPECTION & CITY APPROVALS TYPE "K" COPPER 1.5'-5' - 0.5" **TYP** P METER/DCVA ₫.۵ PROPERTY-TIGHT **SIDEWALK** - 4₽. ... ⊿ ... 1' MIN., 2' TYP. COPPER METER/DCVA LYPE "K" **CURB-TIGHT SIDEWALK** 3' MIN 1' MIN., 2' TYP. CURB CURB: **CORPORATION STOP (TYP)** WATER MAIN WATER MAIN TAPS 2' MIN SEPARATION

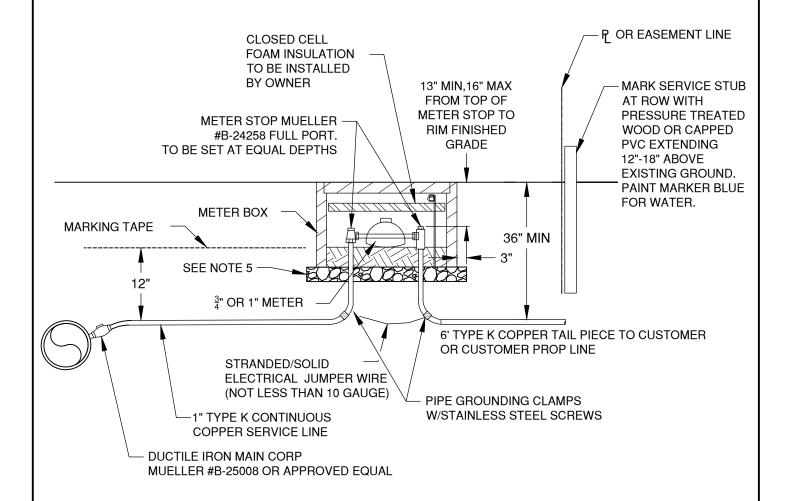
## TWO SERVICES SHARING ONE DITCH AT PROPERTY LINE

- WATER METER BOXES SHALL BE LOCATED IN LANDSCAPE AREAS, NOT IN HARDSCAPE (I.E. SIDEWALKS& DRIVEWAYS). EXCEPTIONS REQUIRE APPROVAL OF CITY ENGINEER
- 2. SET WATER SERVICES A MINIMUM OF 10' FROM ALL SANITARY, FRANCHISE, STORM, AND ELECTRICAL SERVICES.
- 3. METER SHALL MATCH SERVICE LINE SIZE OR ONE SIZE SMALLER.
- 4. A 1" TAP NEAR A BELL SECTION SHALL BE SEPARATED FROM THE BELL BY A MINIMUM OF 2'. TAPS LARGER THAN 1" IN SIZE SHALL BE SEPARATED FROM THE BELL BY A MINIMUM OF 3'.
- 5. WHERE METERS ARE PLACED IN METER BANKS, A PERMANENT ADDRESS TAG PROVIDED BY THE CONTRACTOR SHALL BE PLACED ON THE METER BOX PRIOR TO 1 YEAR WARRANTY RELEASE.
- 6. IF AN EXISTING METER BOX, METER, OR HARDWARE WITHIN THE METER BOX DOES NOT MEET CURRENT CITY STANDARDS, CORRECTIONS OR REPAIRS SHALL BE MADE PRIOR TO THE METER BEING SET.
- 7. METER BOX SHALL BE SET ON 6" MIN CLASS B MATERIAL COMPACTED TO 95% OF MAXIMUM DENSITY.





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# TYPICAL SERVICE

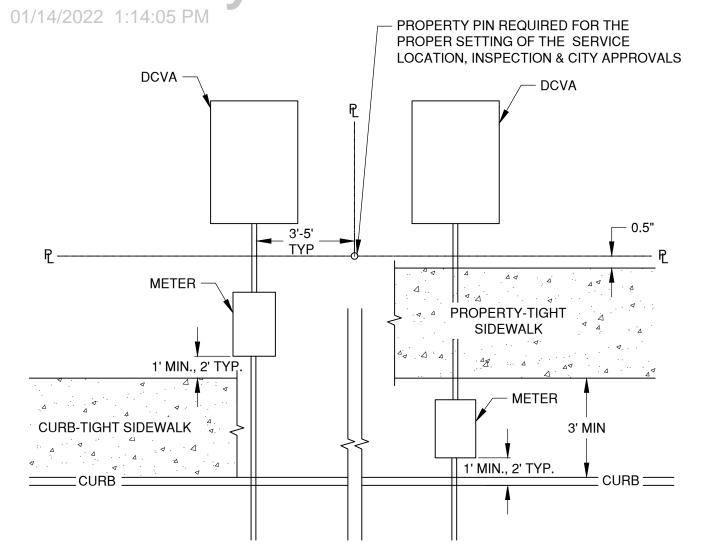
- 1. RESIDENTIAL METER BOXES SHALL BE SET PARALLEL W/THE CURB LINE AND SHALL NOT BE INSTALLED WITHIN SIDEWALK OR PAVED AREAS
- 2. JUMPER SIZE 1" METER SETTER 1 1/4"x11" SCHEDULE 80 THREADED NIPPLE (DOMESTIC) DRILLED TO PREVENT FLOW
- 3. METERS ARE TO BE THE SAME SIZE AS THE SERVICE LINE OR ONE SIZE SMALLER.
- 4. IF AN EXISTING BOX, METER, OR HARDWARE WITHIN THE METER BOX DOES NOT MEET CURRENT CITY STANDARDS, CORRECTIONS OR REPAIRS SHALL BE MADE TO THE EXISTING SERVICE TO MEET CURRENT CITY STANDARDS PRIOR TO THE METER BEING SET.
- 5. METER SHALL BE SET ON 6" MIN CLASS B MATERIAL COMPACTED TO 95% OF MAXIMUM DENSITY.

_	N AJD WATER	(CD)	CITY OF BEND	SCALE NTS
REV	DATE	(6HID) I	STANDARD DRAWING	DATE 12/10/21
		<b>VUI</b>	710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	3/4"-1" RESIDENTIAL METER SERVICE INSTALLATION	STD DWG W-4A

01/14/2022 1:14: METER COUPLING WITH SADDLE METER NUT (TYP) 4-6" MIN. BETWEEN METER STOP AND METER BOX **BACKFLOW-WATTS 007 SERIES** 3/4" OR 1" METER BOX CENTER В В 3/4" 5" 19 1/4" 6" 22" 7" +/- 1" MEASURED FROM TOP OF BOX METER SETTER BAR TO REPLACE **EXISTING JUMPER PLAN** ADDRESSING TAG TO BE MOUNTED TO METAL READER THE INSIDE METER DOOR (NOTE 3) **DOOR** FINISH GRADE METER TRANSMITTER UNIT (MTU) SHALL BE MOUNTED TO THE UNDERSIDE OF THE POLYMER METER BOX LID AT EITHER END OF CLOSED CELL THE LID AWAY FROM THE METAL READER DOOR. FOAM INSULATION ACLARA MTU SHALL BE MOUNTED WITH THE 1/2" MIN "ACLARA" EMBLEM TOWARDS THE LID AND THE ARROW BELOW THE EMBLEM POINTING TOWARDS THE METAL READER DOOR WITH SUPPLIED SPACERS AND (2) 2.5" #10 HEX HEAD SCREWS. SEE STD DWG W-4A FOR BASE MATERIAL **SECTION** OFFSET METER "LOOP" WITH BACKFLOW PREVENTION ASSEMBLY NOTES: RESIDENTIAL METER BOXES SHALL BE SET PARALLEL W/THE CURB LINE AND SHALL NOT BE INSTALLED WITHIN

- SIDEWALK OR PAVED AREAS
- 2. JUMPER SIZE 1" METER SETTER 1 1/4"x11" SCHEDULE 80 THREADED NIPPLE (DOMESTIC) DRILLED TO PREVENT FI OW
- 3. WHERE METER BOXES ARE INSTALLED IN A METER BANK, A BRASS OR STAINLESS STEEL TAG/PLAQUE SHALL BE MOUNTED TO THE INSIDE METER DOOR WITH THE LOT ADDRESS STAMPED PRIOR TO 1 YEAR WARRANTY RELEASE.
- 4. IF THE METER ASSEMBLY/BOX OR SERVICE LINE IS DAMAGED DURING CONSTRUCTION/SITE IMPROVEMENT ACTIVITIES, DURING THE WARRANTY PERIOD, OR IF THE EXISTING METER BOX OR SERVICE LINE DOES NOT MEET CURRENT CITY STANDARDS. THE DEVELOPER/PROPERTY OWNER SHALL UPGRADE THE COMPONENTS OF THE SERVICE THAT IS OUT OF CONFORMANCE.

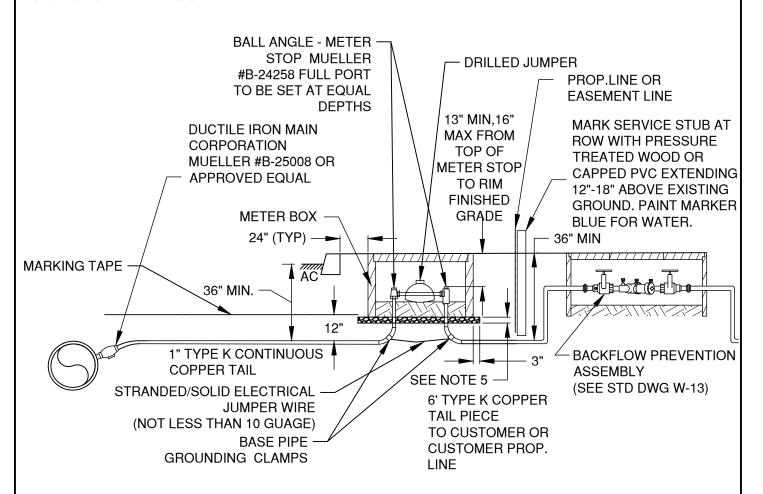
DRA	vn AJD WATER	(CD)	CITY OF BEND	SCALE NTS
REV	DATE	(8 <del>1</del> 110)	STANDARD DRAWING	DATE 12/10/21
			710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	3/4"-1" RESIDENTIAL METER SERVICE INSTALLATION	STD DWG W-4B



- 1. COMMERCIAL METER BOXES SHALL BE INSTALLED PERPENDICULAR TO THE CURB LINE WITH DOUBLE CHECK VALVE ASSEMBLY TO BE LOCATED ON PRIVATE PROPERTY.
- 2. WATER METER BOXES SHALL BE LOCATED IN LANDSCAPE AREAS WHEN POSSIBLE, SEE STD DWG W-5E FOR LOCATING METER BOX IN HARD SURFACE.
- 3. SET WATER SERVICES A MINIMUM OF 10' FROM ALL SANITARY, FRANCHISE, STORM, AND ELECTRICAL SERVICES. ALL TREE WELLS SHALL BE A MINIMUM 6 FEET FROM THE METER BOX INSTALLATION.
- 4. BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED ON PRIVATE PROPERTY.
- 5. IF AN EXISTING METER BOX, METER, OR HARDWARE WITHIN THE METER BOX DOES NOT MEET CURRENT CITY STANDARDS, CORRECTIONS OR REPAIRS SHALL BE MADE TO THE EXISTING SERVICE TO MEET CURRENT CITY STANDARDS PRIOR TO THE METER BEING SET.
- 6. METER BOX SHALL BE SET ON 6" MIN CLASS B MATERIAL COMPACTED TO 95% OF MAXIMUM DENSITY.

_	N AJD WATER	(CD)	CITY OF BEND	SCALE NTS
REV	DATE	(6HD) I	STANDARD DRAWING	DATE 12/10/21
			710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	COMMERCIAL & IRR METER SERVICE INSTALLATION	STD DWG W-5

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## TYPICAL 1" SERVICE WITH METER

- 1. COMMERCIAL METERS NOT TO BE LESS THAN 1-INCH. METER SIZE TO MATCH SERVICE LINE SIZE.
- 2. COMMERCIAL METER BOXES SHALL BE INSTALLED PERPENDICULAR TO THE CURB LINE WITH DOUBLE CHECK VALVE ASSEMBLY TO BE LOCATED ON PRIVATE PROPERTY PER STD DWG W-5.
- 3. COMMERCIAL METERS WILL NOT BE SET UNTIL BACKFLOW PREVENTION ASSEMBLY IS IN PLACE.
- 4. IF AN EXISTING METER BOX, METER, OR HARDWARE WITHIN THE METER BOX DOES NOT MEET CURRENT CITY STANDARDS, CORRECTIONS OR REPAIRS SHALL BE MADE TO THE EXISTING SERVICE TO MEET CURRENT CITY STANDARDS PRIOR TO THE METER BEING SET.
- 5. METER BOX SHALL BE SET ON 6" MIN CLASS B MATERIAL COMPACTED TO 95% OF MAXIMUM DENSITY.

_	N AJD WATER	(CD)	CITY OF BEND	SCALE NTS
	DATE	( <b>({{R}}  </b> 1))	STANDARD DRAWING	DATE 12/10/21
			710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	1" COMMERCIAL & IRR METER SERVICE INSTALLATION	
			1 COMMENCIAL & INTENDET EN SERVICE INSTALLATION	STD DWG W-5A

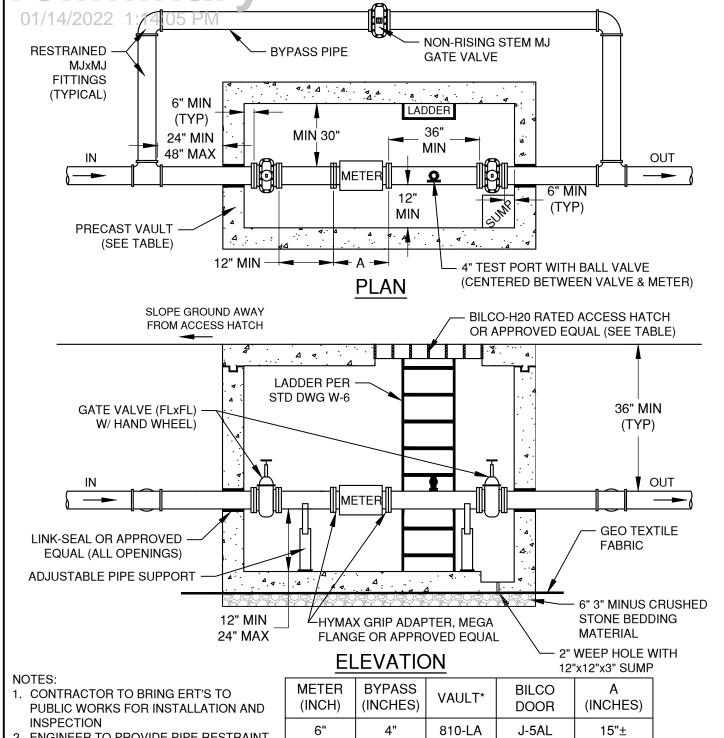
01/14/2022 1:14:05 PM P OR EASEMENT LINE MARK SERVICE STUB AT **ROW WITH PRESSURE** TREATED WOOD OR CAPPED PVC EXTENDING 12"-18" ABOVE EXISTING 13" MIN,16" MAX FROM GROUND. PAINT MARKER TOP OF METER STOP TO BLUE FOR WATER. RIM FINISHED GRADE AC 36" MIN **MARKING TAPE** 36" MIN 12" **BACKFLOW PREVENTION ASSEMBLY** (SEE STD DWG W-13) 2" MUELLER BALL CORP STOP. LL RIGID COPPER OR TYPE K-HARD FROM CORP STOP TO DCVA B25028N 2" 110CTS X MIP DOUBLE STRAP DR2S SERVICE SADDLE. DI MAIN MUELLER OR APPROVED EQUAL

### TYPICAL 2" SERVICE WITH 1-1/2" AND 2" METER

- 1. COMMERCIAL METERS WILL NOT BE SET UNTIL BACKFLOW PREVENTION ASSEMBLY IS IN PLACE
- 2. COMMERCIAL METER BOXES SHALL BE INSTALLED PERPENDICULAR TO THE CURB LINE WITH DOUBLE CHECK TO BE LOCATED ON PROPERTY
- 3. ALL METERS LESS THAN 2" WHEN USING A 2" SERVICE LINE ARE TO BE REDUCED WITHIN THE 2" METER SETTER
- 4. IF AN EXISTING METER BOX, METER, OR HARDWARE WITHIN THE METER BOX DOES NOT MEET CURRENT CITY STANDARDS CORRECTIONS OR REPAIRS SHALL BE MADE TO THE EXISTING SERVICE TO MEET CURRENT CITY STANDARDS PRIOR TO THE METER BEING SET.
- 5. DOUBLE CHECK ASSEMBLY SHALL BE INSTALLED USING THE UNIFORM BUILDING CODE (UBC) AND SHALL BE LOCATED ON A PRIVATE PROPERTY. THE ABOVE DIAGRAM IS FOR REFERENCE ONLY AND IS SUBJECT TO CHANGE BASED ON A REVIEW BY THE UBC PLANS EXAMINER.
- 6. METER BOX SHALL BE SET ON 6" MIN CLASS B MATERIAL COMPACTED TO 95% OF MAXIMUM DENSITY

L		CITY OF BEND	SERVICE INSTALLATION	STD DWG W-5B
		(this	1 1/2" & 2" COMMERCIAL AND IRRIGATION METER	APPR
RE	•	( <b>6HID</b> )	STANDARD DRAWING	DATE 12/10/21
_	WATER	<b>ACON</b>	CITY OF BEND	SCALE NTS

7'-9" STREETSIDE CUSTOMER SIDE WATER METERS SHALL BE WITHIN THE RIGHT OF WAY OR WITHIN CITY WATER EASEMENT ON PRIVATE **LADDER PROPERTY** 5 1'-0" CLEARANCE FROM METER 3 TO VAULT WALL 6'-3" 12 12 4"DI PIPE 4" DI PIPE TO BACKFLOW ASSEMBLY 12" MIN (SEE DWG W-13B, W-15 & W-15B) 2'-0" - SEE NOTE 4 HYMAX GRIP FLANGE ADAPTER, MEGA-FLANGE ADAPTER OR APPROVED EQUAL SLOPE GROUND PLAN AWAY FROM VAULT 3" OR 4" SENSUS OMNI METER AND TRANSPONDER, 3" OR 4" HERSEY HBMAG W/ ENCODER REGISTER AND TRANSPONDER 4. **ELEVATION MARKING** SEE NOTE 4 3'-0" TO 3'-6' **TAPE** 5'-5" 12" MIN, 24" MAX 4"DI PIPE **INSTALL CONCRETE BALLAST 3 CY MIN** AROUND BASE OF VAULT IN AREAS WHERE FLOODING OR HIGH **GEO TEXTILE GROUNDWATER EXISTS FABRIC** 6" WASHED 3" MINUS DRAIN ROCK ITEM QTY DESCRIPTION 2EA 4"x3" FLG x FLG REDUCER & 3" FLG GATE VALVE WITH HANDWHEEL OR 4"x4" FLG GATE VALVE WITH HANDWHEEL 2" SE GATE VALVE AWWA C509 1 3 DOUBLE STRAP DR-25 SERVICE SADDLE, MUELLER 2 OR APPROVED EQUAL 2" BRASS 90° COMP x COMP NOTES: 5 1. SEAL ALL OPENINGS IN VAULT WITH NON 6 2 2" TYPE K HARD COPPER PIPE SHRINK GROUT 7 2" COMP UNION 1 2. ENGINEER TO PROVIDE PIPE RESTRAINT 8 OLD CASTLE 675-WA WITH OPENING FOR BILCO **DETAIL ENTERING & EXITING VAULT** DOOR JD-3AL AND OSHA APPROVED LADDER 3. METER SIZE TO MATCH SERVICE SIZE OR (SEE STD DWG W-6) ONE SIZE SMALLER. 9 WEEP HOLE (12"x12"x3" SUMP) 4. WHERE THE METER DOES NOT PROVIDE A l10 2 2" PIPE STAND "STANDON" TEST PORT, A 2" TEST PORT SHALL BE 2" MPT x COMP ADAPTER INSTALLED WITH 2" TAP SADDLE, 2" BRASS 11 4 BALL VALVE, AND 2" BRASS NIPPLE. 12 2 4"x3" REDUCER (WHERE 3" METER IS INSTALLED) DRAWN AJD SCALE NTS CITY OF BEND DIV WATER STANDARD DRAWING REV DATE DATE 12/10/21 710 NW WALL ST., BEND, OREGON 97701 APPR CITY OF BEND 3" & 4" COMMERCIAL METER INSTALLATION STD DWG W-5C



- 2. ENGINEER TO PROVIDE PIPE RESTRAINT DETAIL ENTERING & EXITING VAULT
- 3. METER SIZE TO MATCH SERVICE SIZE OR ONE SIZE SMALLER.
- 4. WHERE THE METER DOES NOT PROVIDE A TEST PORT, A 2" TEST PORT SHALL BE INSTALLED WITH 2" TAPPING SADDLE, 2" BRASS BALL VALVE, AND 2" BRASS NIPPLE.

METER (INCH)	BYPASS (INCHES)	VAULT*	BILCO DOOR	A (INCHES)
6"	4"	810-LA	J-5AL	15"±
8"	6"	810-LA	JD-3AL	17"±
10"	8"	612-LA	JD-3AL	20"±
12"	12"	612-LA	JD-3AL	24"±

\* VAULT SIZES MAY VARY BY ENGINEER DESIGN PROVIDE MIN DIMENSIONS ARE MAINTAINED

	N AJD	DRAW
	WATER	DIV \
	DATE	REV
CITY OF BEND		
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## CITY OF BEND

STANDARD DRAWING

710 NW WALL ST., BEND, OREGON 97701

6" AND LARGER COMMERCIAL METER INSTALLATION

SCALE NTS
DATE 12/10/21
APPR
STD DWG W-5D

01/14/2022 1:14:06 PM EASEMENT (WHEN APPLICABLE) SIDEWALK INSTALLATION 1 WITHIN 5' PUBLIC ACCESS **ACCESSIBLE** COMMERCIAL BACKFLOW EASEMENT AS REQUIRED BY PATH OF TRAVEL PER W-13. SEE NOTE 4. BEND CENTRAL DISTRICT. WHEN RESIDENTIAL. MAY NOT BE APPLICABLE FOR BACKFLOW IS IN METER BOX ALL PROJECTS. PER W-4B 6' MIN SEPARATION FROM METER BOX TO TREE WELL, WHEN APPLICABLE. **EXPANSION JOINT** SEE NOTE 2 **CURB** 1' MIN.. SEE NOTE 1. SHOWN AS A 2' TYP. COMMERCIAL METER SET -TREE WELL, MIN 4'X9' AS INSTALL TO W-5. WHERE RESIDENTIAL, INSTALL TO W-4. APPLICABLE, REFER TO 12,2,4,1 OF THE CONSTRUCTION DESIGN TYPICAL INSTALLATION IN THE BEND **STANDARDS** CENTRAL DISTRICT OR WHERE WIDENED SIDEWALKS ARE REQUIRED BY DEVELOPMENT CODE. METERS TO BE

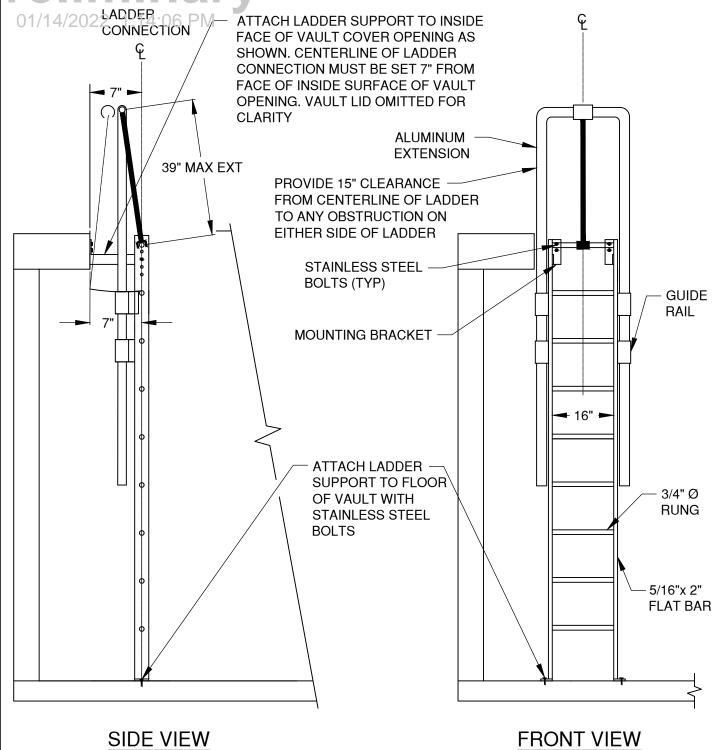
#### NOTE:

1. WATER METER BOXES SHALL BE LOCATED IN LANDSCAPE AREAS WHEN POSSIBLE. IF WATER METER BOX CAN BE LOCATED ON PRIVATE PROPERTY TO REMOVE IT FROM SIDEWALK, A UTILITY EASEMENT SHALL BE GRANTED TO THE CITY TO MAINTAIN THE METER.

PERMITTED WITHIN HARDSCAPE ONLY WHEN APPROVED BY THE CITY ENGINEER.

- 2. AN EXPANSION JOINT IN THE SIDEWALK SHALL BE INSTALLED 12-INCH AROUND THE ENTIRE PERIMETER OF THE METER BOX.
- 3. STATE SPEC BASE ROCK SHALL BE COMPACTED TO 95% IMMEDIATELY BELOW AND FOR A MINIMUM OF 3 FEET AROUND THE METER BOX.
- 4. BACKFLOW DEVICE SHALL BE INSTALLED ON PRIVATE PROPERTY. WHERE BACKFLOW DEVICES CANNOT BE PLACED WITHIN LANDSCAPE, THE BOX SHALL BE INSTALLED OUTSIDE THE RIGHT OF WAY AND OUTSIDE A PUBLIC UTILITY EASEMENT. INSTALLATION OF BACKFLOW DEVICES WITHIN A BUILDING WILL BE GRANTED ON A CASE BY CASE BASIS BY THE CITY ENGINEER ONLY WHERE IT CAN BE ADEQUATELY SHOWN NOT TO FIT OUTSIDE THE BUILDING (EXAMPLE, THE BACKFLOW DEVICE, AND THEREFORE THE VAULT, IS TOO LARGE TO FIT)
- 5. SET WATER SERVICES A MINIMUM OF 10' FROM ALL SANITARY, FRANCHISE, STORM, AND ELECTRICAL SERVICES. ALL TREE WELLS SHALL BE A MINIMUM 6 FEET FROM THE METER BOX INSTALLATION.
- 6. WATER METERS SHALL NOT BE PLACED WITHIN VEHICULAR SURFACES (DRIVEWAYS) WITHOUT CITY ENGINEER APPROVAL.
- 7. COMMERCIAL WATER METER BOXES TO BE INSTALLED PERPENDICULAR TO THE CURB LINE, SEE STD DWG W-5. RESIDENTIAL WATER METER BOXES TO BE INSTALLED PARALLEL TO THE CURB LINE PER STD DWG W-4

		CITY OF BEND	METER INSTALLATION IN SIDEWALKS	STD DWG W-5E
			· ·	APPR
			710 NW WALL ST., BEND, OREGON 97701	
-	DATE	((&IIN)	STANDARD DRAWING	DATE 12/10/21
	N AJD WATER	(In)	CITY OF BEND	SCALE NTS



- 1. GALVANIZED LADDER W/AN ALUMINUM EXTENSION BY OLDCASTLE (OR APPROVED EQUAL) (PER OAR 437, DIV 2, CODE OF FEDERAL REGULATIONS, TITLE 29, CHAPTER XVII PART 1910.27)
- 2. 5'-4" GALVANIZED LADDER FROM OLDCASTLE TO BE CUT DOWN TO 4'-7" BY CONTRACTOR FOR USE IN VAULT 675-WA. OLDCASTLE TO SUPPLY 49 1/2" ALUMINUM EXTENSION

_	N AJD WATER		CITY OF BEND	SCALE NTS
-	DATE	(GHID)	STANDARD DRAWING	DATE 12/10/21
			710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	GALV. LADDER W/ ALUM EXT FOR WATER VAULTS	STD DWG W-6

01/14/2022 1:14:06/P 5 1/4" PUMPER NOZZLE 2 1/2" HOSE -**NOZZLES** 3.5' MIN **CONCRETE** PAD 6" THICK (SEE DWG W-8) BURY **VALVE & VALVE BOX** SEE NOTE 3 SEE DWG W-30 NON-WOVEN DEPTH OF BURY 4'-5.5' MAX (NOTE 7 **UNDISTURBED** FILTER FABRIC EARTH OR PLASTIC (SEE **DRAIN ROCK** Z Z NOTE 5) 1/4 CY MIN 3/4" MINUS **CRUSHED** 36" **ROCK CLASS B** 6" DI PIPE **DRAIN** 

#### NOTES:

1. ALL PIPES SHALL HAVE RESTRAINED JOINTS.

**UNDISTURBED** 

**EARTH** 

- 2. MJ x MJ TEE OR MJxMJxSWIVEL (REQUIRES ENGINEER APPROVAL) WITH 6-INCH VALVE AT THE MAINLINE.
- 3. FINISH GRADE OF HYDRANT SHALL BE SET AT BURY LINE TO A MAXIMUM OF 3" BELOW BURY LINE FOR NEW INSTALLATION AND MAX OF 6" FOR RETROFITS. NO HYDRANT EXTENSIONS PERMITTED ON NEW INSTALLATIONS.

"MEGALUG"

**DRAIN ROCK** 

**HYDRANT SUPPORT** 

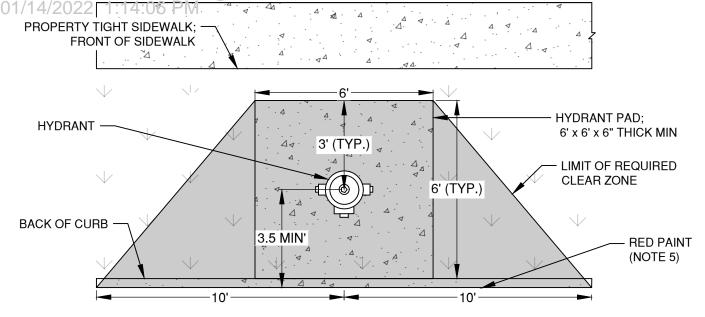
OR APPROVED EQUAL

- 6" MJ x MJ SHOE

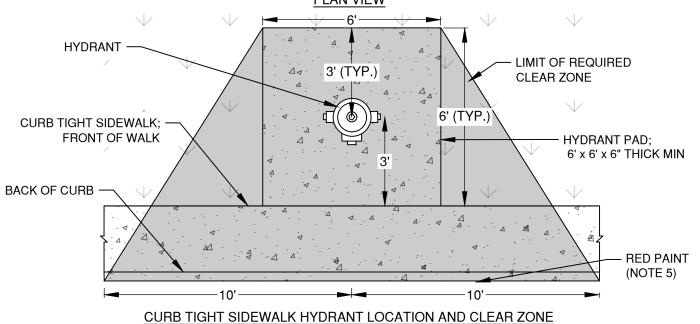
8"X8"X8" MIN. CONCRETE BLOCK FOR

- 4. SET HYDRANT PLUMB. COMPACT ALL BACKFILL PER SPECIFICATIONS.
- 5. NON-WOVEN SEPARATION FILTER FABRIC OR PLASTIC (OSS TABLE 02320-4) INSTALLED BETWEEN UNDISTURBED EARTH AND DRAINROCK PRIOR TO BACKFILL.
- 6. HYDRANTS SHALL BE MANUFACTURER'S RED. NO OTHER COLOR IS PERMITTED.
- 7. BURY DEPTH IS MAX 6 FEET. USE 45 DEGREE OR 22.5 DEGREE BENDS TO ADJUST ACCORDINGLY.

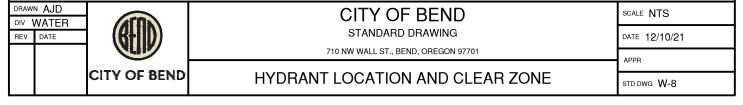
	WATER	(FD)	CITY OF BEND	SCALE NTS
REV	DATE	<b>(6HD)</b>	STANDARD DRAWING	DATE 12/10/21
		<b>UII</b>	710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	TYPICAL HYDRANT	STD DWG W-7



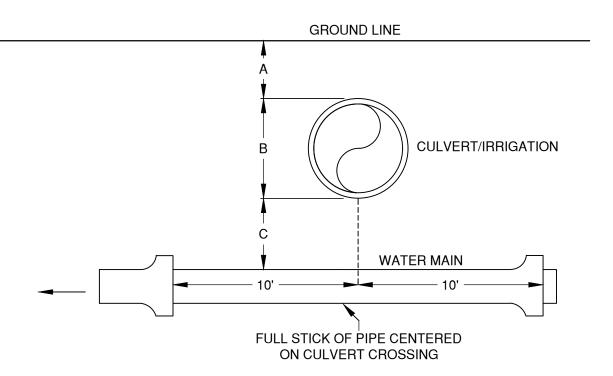
# PROPERTY TIGHT SIDEWALK HYDRANT LOCATION AND CLEAR ZONE PLAN VIEW



- 1. THE CLEAR ZONE PROHIBITS PARKING, FENCES, TREES, RETAINING WALLS, OR OTHER STRUCTURES THAT COULD INTERFERE WITH OPERATION OF HYDRANT. GRASS, MULCH, BARKDUST, AND GROUND COVER IS PERMITTED.
- 2. PROPERTY OWNERS SHOULD BE AWARE THAT GROUND COVER COULD BE DAMAGED WHEN THE HYDRANT IS USED OR WHEN HYDRANT MAINTENANCE IS PERFORMED.
- 3. CONCRETE PADS ARE TO BE A MINIMUM OF 6" THICK AND BE POURED AND PLACED ON 2" MIN. COMPACTED BASE ROCK PER SECTION OSS 00405.00
- 4. THERE SHALL BE A MINIMUM 4 FOOT CLEAR TRAVEL WIDTH ON SIDEWALKS ADJACENT TO HYDRANTS.
- 5. THE CURB SHALL BE PAINTED RED FOR A TOTAL OF 20 FEET, CENTERED ON THE HYDRANT.



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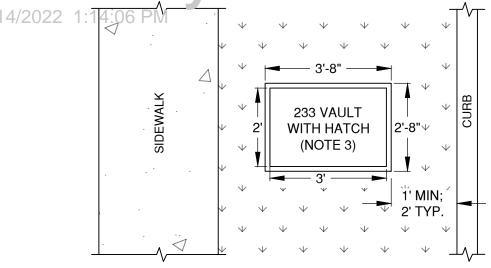
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COVER FROM CULVERT TO FINISH GRADE	CULVERT SIZE	SEPARATION CULVERT TO MAIN
12" OR LESS	6" THRU 12"	NOT LESS THAN 18"
12" OR MORE	6" THRU 12"	NOT LESS THAN 12"
12" OR LESS	14" THRU 24"	NOT LESS THAN 30"
12" OR MORE	14" THRU 24"	NOT LESS THAN 24"
	GREATER THAN 24"	NOT LESS THAN 36"

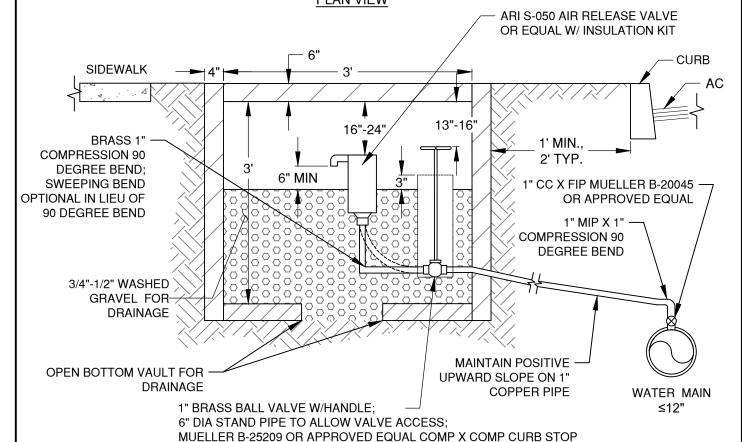
-		√ AJD WATER	(rn)	CITY OF BEND	SCALE NTS
-	_	DATE	(GHID)	STANDARD DRAWING	DATE 12/10/21
1				710 NW WALL ST., BEND, OREGON 97701	APPR
١			CITY OF BEND	SEPARATION OF WATER LINE TO IRRIGATION CULVERTS	STD DWG W-9

STANDARD MANHOLE 14:06 PM FRAME AND LID AIR RELEASE SHALL "WATER" CAST IN LID BE INSTALLED CENTERED IN THE ARI S050 AIR RELEASE VALVE 16" - 24" MANHOLE LID OR EQUAL W/INSULATION KIT (SEE NOTE 2) **ROADWAY** EXPOSED 1/4 TURN 6" MIN **BALL VALVE** COMPRESSION FITTING X MIP 48" DIA-- COPPER PIPE **ECCENTRIC** 3/4"-1/2" WASHED **MANHOLE** GRAVEL FOR DRAINAGE CONE 2" MIN CLEARANCE **BETWEEN CONE** AND MAIN 6" STATE SPEC 1" CC X CTS MUELLER B-25008 WATER MAIN OR APPROVED EQUAL FOR 1" AGGREGATE BASE **PROFILE VIEW** AIR RELEASE; OR 2" TAPPING **COMPACTED TO 95%** SADDLE, CTS X MIP CORP STOP MUELLER B-25028 OR APPROVED EQUAL FOR 2" AIR THE CONE SHALL BE -RELEASE (SEE NOTE 2) VERTICALLY SEPARATED FROM THE WATER MAIN BY A MINIMUM OF 2 INCHES; NYLON WATER MAIN **BLOCKS TO BE PLACED** POLYMER SAND BAGS TO BENEATH THE MANHOLE BE PLACED BETWEEN CONE; BLOCKS SHALL BE THE CONE AND THE **SEPARATED** WATER MAIN FOR HORIZONTALLY FROM PROTECTION OF WATER WATER MAIN BY A **MAIN** MINIMUM OF 4 INCHES **PLAN VIEW** GENERAL NOTES: AIR RELEASE OR COMBINATION VALVES SHALL BE INSTALL AT ALL HIGH POINTS. WHERE THE HIGH POINT IS AT THE TOP OF A LONG ASCENT (1,250 FEET+) A COMBINATION AIR/VACUUM VALVE SHALL BE INSTALLED. 1" AIR RELEASE VALVE TO BE USED ON WATER MAINS LESS THAN 12" IN DIAMETER. 2" AIR RELEASE VALVE TO BE USED ON WATER MAINS GREATER THAN OR EQUAL TO 12" IN DIAMETER. DRAWN AJD SCALE NTS CITY OF BEND DIV WATER STANDARD DRAWING REV DATE DATE 12/10/21 710 NW WALL ST., BEND, OREGON 97701 APPR CITY OF BEND 1" & 2" STANDARD AIR RELEASE VALVE - TRAFFIC AREA STD DWG W-10

<u>Preliminary</u>



# AIR RELEASE VALVE LOCATION PLAN VIEW



#### **GENERAL NOTES:**

- 1. AIR RELEASE OR COMBINATION VALVES SHALL BE INSTALL AT ALL HIGH POINTS. WHERE THE HIGH POINT IS AT THE TOP OF A LONG ASCENT (1,250 FEET+) A COMBINATION AIR/VACUUM VALVE SHALL BE INSTALLED.
- 2. IF 1" AIR RELEASE VALVE IS INSTALLED IN TRAFFIC AREA, INSTALL PER STD DWG W-10.
- 3. VAULT SHALL BE PRECAST VAULT WITH 2'X3' HATCH AND OPEN BOTTOM, OR APPROVED EQUAL.

DIV	WATER DATE		CITY OF BEND STANDARD DRAWING	SCALE NTS  DATE 12/10/21
		ALLIN	710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	1" STANDARD AIR RELEASE VALVE	STD DWG W-10A

3'-8" -CURB SIDEWALK **233 VAULT** 2' 2'-8"√ WITH HATCH (NOTE 3) 1' MIN; 2' TYP. STANDARD VALVE BOX -PER STD DWG W-30 AIR RELEASE VALVE LOCATION **PLAN VIEW** ARI S050 AIR RELEASE VALVE OR **EQUAL W/INSULATION KIT** 6" CURB -**SIDEWALK** 3' 1' MIN., 16"-24" 2' TYP. 6" MIN AVK SERIES 03 2" GATE , J O 010  $\bigcirc$ **VALVE WITH STAINLESS**  $\bigcirc$ STEEL STEM, 2" SQUARE **OPERATING NUT OR** APPROVED EQUAL 3/4"-1/2" WASHED GRAVEL FOR-DRAINAGE 2" CTS OR COMPRESSION ∠ 90° BENDS **OPEN BOTTOM** MAINTAIN POSITIVE SLOPE ON 2" AIR -MIP X FIP 2" BALL CORP **VAULT FOR RELEASE PIPING BETWEEN MAIN &** MUELLER B-20046 OR WATER MAIN **DRAINAGE** AIR RELEASE VALVE APPROVED EQUAL >12" **GENERAL NOTES:** AIR RELEASE OR COMBINATION VALVES SHALL BE INSTALL AT ALL HIGH POINTS. WHERE THE HIGH POINT IS AT THE TOP OF A LONG ASCENT (1,250 FEET+) A COMBINATION AIR/VACUUM VALVE SHALL BE INSTALLED.

- 2. SEE STD DWG W-10 FOR 2" AIR RELEASE VALVES LOCATED IN TRAFFIC AREAS.
- 3. VAULT SHALL BE ADVANCED PRECAST PRODUCT 233 VAULT WITH 2'X3' HATCH AND OPEN BOTTOM, OR APPROVED EQUAL.

ŀ	√ AJD WATER	(CD)	CITY OF BEND	SCALE NTS
ļ	DATE	1 ( <b>8HID</b> )	STANDARD DRAWING	DATE 12/10/21
		710 NW WALL ST., BEND, OREGON 97701	APPR	
	CIT	Y OF BEND	2" STANDARD AIR RELEASE VALVE	STD DWG W-10B

01/14/2022 1:14:06 PM 6" MIN DBL CHECK **VALVE** 3" MIN 3" MIN — 6" MIN **TOP VIEW CLOSED CELL** METAL READER -FOAM INSULATION DOOR 1/2" MIN FINISH GRADE 13-16" WATER METER BOX **OPTIONAL UNION IF** TEST -**INSTALLED ON PVC** COCKS 1" & SMALLER ONLY (TYP) SIDE VIEW

- 1. DOUBLE CHECK VALVE ASSEMBLIES (DCVAs) MAY BE INSTALLED VERTICAL AS WELL AS HORIZONTAL PROVIDED THAT THE ASSEMBLY IS APPROVED FOR VERTICAL INSTALLATIONS
- 2. DCVAs MAY BE INSTALLED BELOW GRADE IN A VAULT PROVIDED WATER TIGHT, THREADED PLUGS ARE INSTALLED IN THE TEST COCKS, BUT THE ASSEMBLY SHALL NOT BE SUBJECT TO CONTINUOUS IMMERSION
- 3. BLOWOUT PORTS, WHEN REQUIRED MUST BE INSTALLED DOWNSTREAM OF LAST ASSEMBLY SHUTOFF

_	N AJD WATER	(TD)	CITY OF BEND	SCALE NTS
	DATE	(6HID)	STANDARD DRAWING	DATE 12/10/21
			710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	TYPICAL DCVA INSTALLATIONS 2" AND SMALLER	STD DWG W-13

CITY WATER DEPT F LUMBING CODE 01/14/2028/ANDARDS6 PIV FOR REFERENCE ONLY DCDA OR MEGA FLG OR EQUAL -CITY APPROVED FLANGE COUPLING RIGHT OF WAY LINE. BACKFLOW DEVICE **ADAPTOR** VAULT INSTALLED ON (DCDA SHOWN) PRVT PROPERTY UNLESS APPROVED IN ROW 12" MIN FROM THE MAIN (DCDA) OR METER (DCVA) FLOW FLOW 6" MIN OSHA APPROVED LADDER WITH-24" MIN ALUMINUM LADDER EXTENSION BY OLDCASTLE, CENTER UNDER HATCH (SEE STD DWG W-6) FLOOR, DRAIN **PLAN** HATCH **GROUND LINE** DOUBLE CHECK DETECTOR 3" MIN - 6" MAX ASSEMBLY (DCDA) FOR FIRE SPRINKLER AND HYDRANT LINES ONLY. DOUBLE CHECK VALVE 12" MIN ASSEMBLY (DCVA) FOR DOMESTIC. MEGA FLG OR EQUAL PRIVATELY OWNED & MAINTAINED. (DCDA SHOWN). FLOW FLOW PIPE STAND 12" MIN - 24" MAX (TYP) FLOOR DRAIN INSTALLED MINIMUM <sup>1</sup>/<sub>4</sub> CY 3" **ELEVATION** 

**VAULT MODEL** 

PIPE		VAULT OR UAL	BILCO DOOR OR EQUAL
SIZE	W/ FDC*	W/O FDC	OR EQUAL
3		660-WA	J-5AL
4	676-WA	577-WA	J-5AL
6	687-WA	676-WA	J-5AL
8	5106-LA	687-WA	JD-3AL
10	5106-LA	5106-LA	JD-3AL

FIRE SPRINKLER VAULTS INSTALLED IN RIGHT OF WAY OR UTILITY EASEMENT ONLY WHEN APPROVED BY CITY ENGINEER.

#### NOTES:

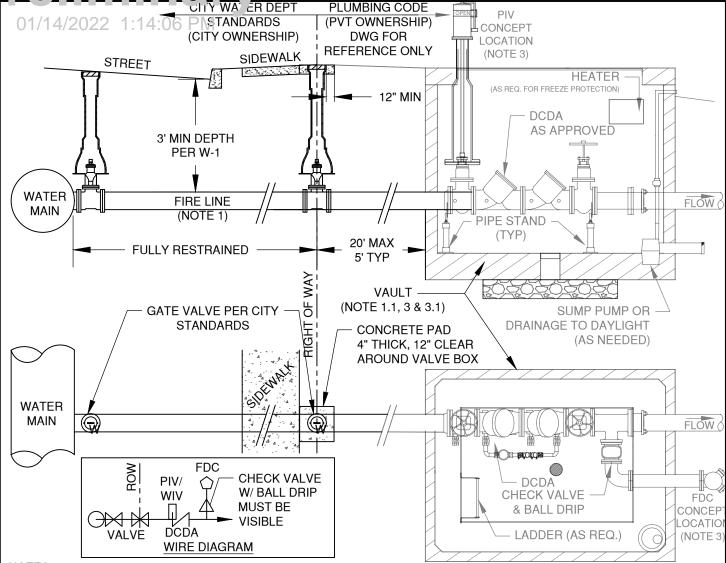
- 1. ENGINEER TO PROVIDE RESTRAIN DETAIL FOR ALL PIPE ENTERING & **EXITING VAULT**
- 2. CONTRACTOR TO SEAL ALL OPENINGS IN VAULT WITH NON-SHRINK **GROUT PRIOR TO BACKFILLING**
- 3. CONDUIT BROUGHT TO VAULT FOR PUMP POWER AND DETECTOR WIRING.

DRAIN ROCK

- 4. ENGINEERED DESIGN TO BE PROVIDED WITH PERMIT.
- 5. VAULT AND LID TO BE TRAFFIC RATED
- FOR FIRE SPRINKLER VAULTS, REFER TO W-13B. 6. ALL FIRE LINES SHALL HAVE THE VAULT & DOUBLE CHECK DETECTOR ASSEMBLY (DCDA) INSTALLED CONCURRENTLY FOR TESTING & DISINFECTION TO THE CITY MAIN.
  - 7. PIPE SHALL MEET CITY ROW SPECIFICATIONS FROM MAIN TO DCDA

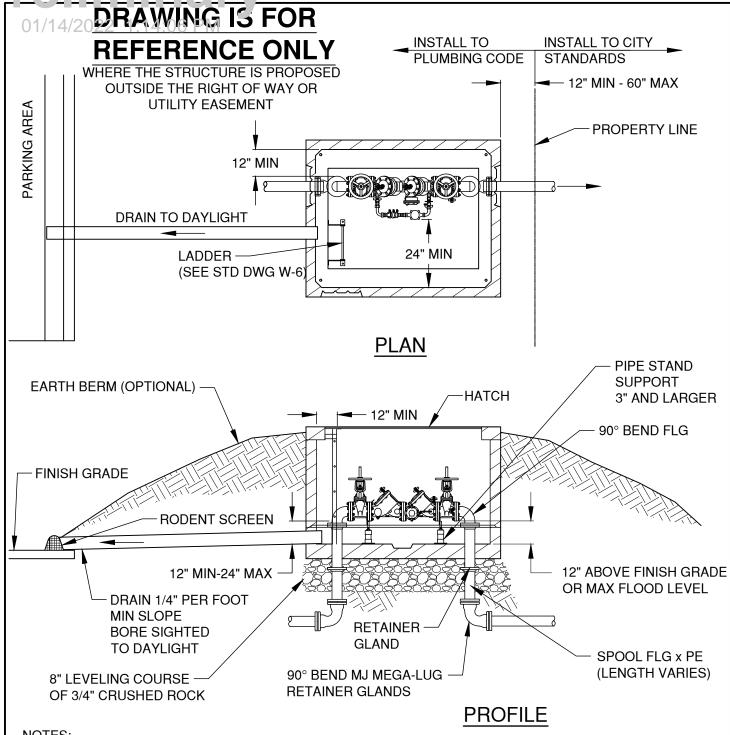
_	w AJD WATER	(FO)	CITY OF BEND	SCALE NTS
REV	DATE	(GHID)	STANDARD DRAWING	DATE 12/10/21
			710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	2" & LARGER DOUBLE CHECK VALVE ASSEMBLY	STD DWG W-13A

<u>Preliminary</u>



- 1. FIRE VAULT AND DCDA IS SHOWN FOR REFERENCE ONLY. VAULT AND PLUMBING BEYOND THE GATE VALVE SHALL BE INSTALLED PER PLUMBING CODE AND INSPECTED BY THE BUILDING DEPARTMENT.
  - 1.1. WHERE FIRE VAULT IS APPROVED BY CITY ENGINEER TO BE WITHIN THE ROW OR PUBLIC EASEMENT, VAULT SIZES ON STD DWG W-13A SHALL APPLY AND "FOR REFERENCE NOTES" ON THIS SHEET WOULD APPLY.
- 2. FIRE LINE TO BE 4" MIN DUCTILE IRON WATER MAIN PER CITY OF BEND SPECIFICATIONS. FIRE LINE TO BE SIZED BY ENGINEER UNDER A RIGHT OF WAY PERMIT.
- 3. VAULT TO BE SIZED BY ENGINEER IN CONFORMANCE TO BUILDING/FIRE/PLUMBING CODE, MEETING THE DOUBLE CHECK DETECTOR ASSEMBLY (DCDA) MANUFACTURER'S INSTALLATION SPECIFICATIONS.
  - 3.1. WHERE BUILDING IS WITHIN 20 FEET OF THE RIGHT OF WAY LINE, AND AS APPROVED BY THE BUILDING OFFICIAL, THE DCDA CAN BE WITHIN THE BUILDINGS MECHANICAL ROOM. ACCESS TO THE MECHANICAL ROOM TO BE PROVIDED BY AN EXTERIOR DOOR WITH KNOX BOX.
- 3.2. VAULTS ARE TO BE PLACED OUT OF HARD SURFACES (SIDEWALKS, DRIVEWAYS/ROADWAYS,ECT.)
- 4. POST INDICATOR VALVE (PIV) AND FIRE DEPARTMENT CONNECTION (FDC) TO BE LOCATED IN CLEAR VIEW OF THE FRONTAGE STREET, WITH THE FDC LOCATED WITHIN AN ALLOWABLE DISTANCE FROM A HYDRANT. PIV AND FDC MAY BE MOUNTED ON THE BUILDING IN CONFORMANCE WITH THE FIRE CODE AND AS APPROVED. PIV AND FDC CAN BE MOUNTED OUTSIDE THE VAULT OR THROUGH THE VAULT LID PROVIDED THEY DON'T INTERFERE WITH VAULT ACCESS AND THE PENETRATIONS ARE GROUTED AND DON'T NEGATE THE STRUCTURAL INTEGRITY OF THE VAULT. PIV NOT TO BE USED IN-LIEU OF ISOLATION GATE VALVE AT PROPERTY LINE.
- 5. ALL ELECTRICAL TO VAULT AND PIV TO BE INSTALLED PER BUILDING AND FIRE CODE AS REQUIRED.
- 6. PIPE SHALL MEET CITY ROW SPECIFICATIONS FROM MAIN TO DCDA

	N AJD WATER	(ff)	CITY OF BEND	SCALE NTS
-	DATE	(GHID)	STANDARD DRAWING	DATE 12/10/21
	CI	(LII)	710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	FIRE SPRINKLER LINE	STD DWG W-13B



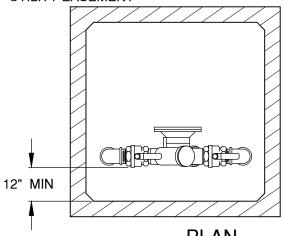
- 1. THIS DRAWING IS FOR REFERENCE ONLY. INSTALL PER PLUMBING CODE AND BUILDING DEPARTMENT REQUIREMENTS.
- 2. ENGINEER TO PROVIDE RESTRAINT DETAIL FOR ALL PIPE ENTERING & EXITING VAULT
- CONTRACTOR TO SEAL ALL OPENINGS IN VAULT WITH NON-SHRINK GROUT PRIOR TO BACKFILLING
- 4. HIGH OR LOW HAZARD CONNECTIONS SHALL BE IDENTIFIED AND VERIFIED WITH CITY CROSS CONNECTION SPECIALIST
- 5. PIPE SHALL MEET CITY ROW SPECIFICATIONS FROM MAIN TO DCDA

-	WN AJD WATER	(ED)	CITY OF BEND	SCALE NTS
RE	1	( <b>&amp;HID</b> )	STANDARD DRAWING	DATE 12/10/21
			710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	2 1/2"-10" REDUCED PRESSURE BACKFLOW ASSEMBLY	STD DWG W-15

# DRAWING 4S:FOR

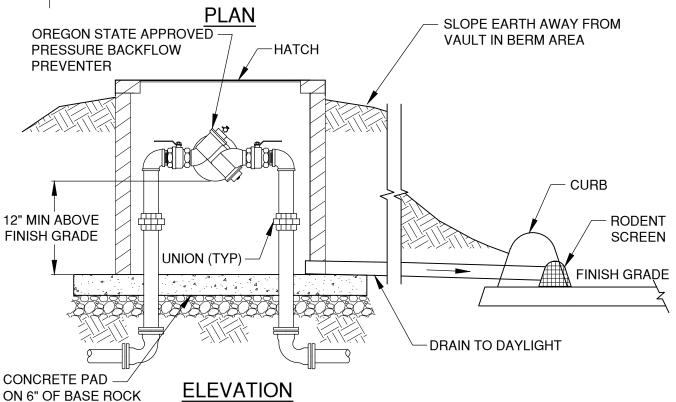
# REFERENCE ONLY

WHERE THE STRUCTURE IS PROPOSED OUTSIDE THE RIGHT OF WAY OR UTILITY EASEMENT



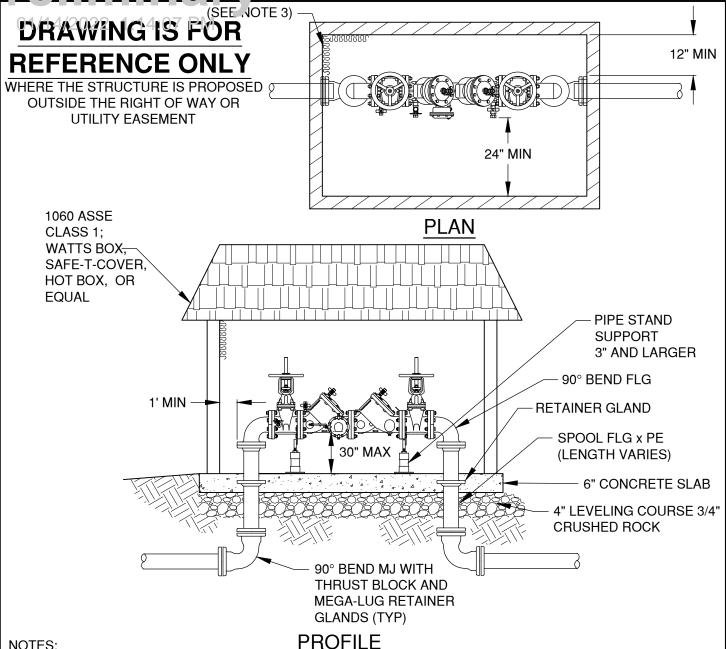
#### **VAULT SPECIFICATIONS**

WATER LINE DIAMETER	MODEL
1"	OLDCASTLE 3030-LA (OR EQUAL)
1-1/2" - 2"	OLDCASTLE 3642-PUT (OR EQUAL)



- 1. THIS DRAWING IS FOR REFERENCE ONLY. INSTALL PER PLUMBING CODE AND BUILDING DEPARTMENT REQUIREMENTS.
- 2. REDUCED PRESSURE BACKFLOW ASSEMBLY TO BE LOCATED DIRECTLY DOWN STREAM OF WATER METER
- 3. BRASS, STAINLESS, OR PLASTIC PLUGS TO BE INSTALLED IN TEST COCKS IF BELOW GROUND INSTALLATION
- 4. HIGH OR LOW HAZARD CONNECTIONS SHALL BE IDENTIFIED AND VERIFIED WITH CITY CROSS CONNECTION SPECIALIST

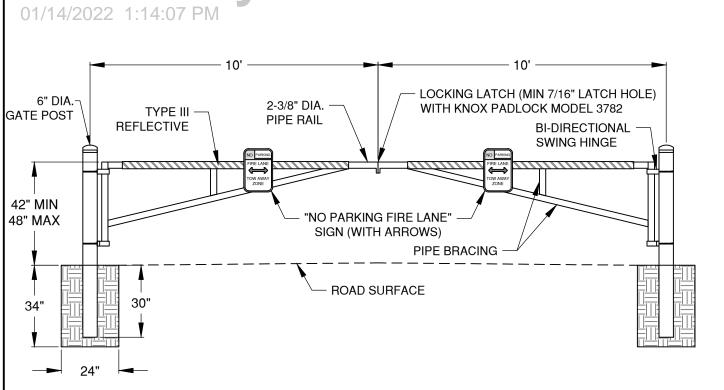
-	N AJD WATER	(LD)	CITY OF BEND	SCALE NTS
$\vdash$	DATE	(GHID)	STANDARD DRAWING	DATE 12/10/21
			710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	1"-2" REDUCED PRESSURE BACKFLOW ASSEMBLY	STD DWG W-15A



- 1. THIS DRAWING IS FOR REFERENCE ONLY. INSTALL PER PLUMBING CODE AND BUILDING DEPARTMENT REQUIREMENTS OR AS BY MANUFACTURER'S REQUIREMENTS.
- 2. REDUCED PRESSURE BACKFLOW ASSEMBLY SHALL BE INSTALLED HORIZONTALLY UNLESS APPROVED FOR OTHER ORIENTATION
- 3. ALL CLEARENCES APPLY TO OUTSIDE, IN-BUILDING, AND VAULT INSTALLATIONS
- 4. STRUCTURE TO BE INSULATED AND HAVE A HEAT SOURCE TO KEEP ENCLOSURE AT40°F (NFPA 13-4-5.4.1.1)
- 5. ENCLOSURE SHALL INCLUDE A BORE SIGHTED DRAIN TO DAYLIGHT CAPABLE OF DRAINING A FULL RELIEF VALVE DISCHARGE. MAKE/MODEL/SIZE WILL DICTATE THE SIZE OF THE ENCLOSURE.
- 6. ALL ASSEMBLIES 2 1/2" AND LARGER SHALL BE FLANGED
- 7. HIGH OR LOW HAZARD CONNECTIONS SHALL BE IDENTIFIED AND VERIFIED WITH CITY CROSS CONNECTION SPECIALIST

_	WATER	(In)	CITY OF BEND	SCALE NTS
RE		<b>1 ((8+111)</b> )	STANDARD DRAWING	DATE 12/10/21
			710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	2 1/2" + REDUCED PRESSURE BACKFLOW ASSEMBLY	STD DWG W-15B

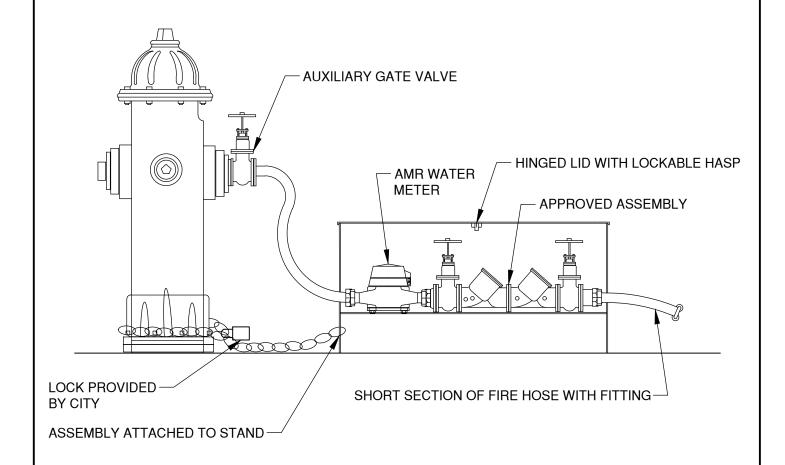
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- 1. ALL MATERIAL SHALL BE SCHEDULE 40. GALVANIZED STEEL PIPE.
- 2. PROTECTIVE FINISH SHALL BE HOT-DIPPED, GALVANIZED GRAY.
- CONTRACTOR TO INSTALL NO PARKING, FIRE LANE SIGN ON EACH SIDE OF GATE MEETING THE REQUIREMENTS OF OFC D103.6.
- 4. CONTRACTOR TO INSTALL TYPE III REFLECTIVE STRIPING ON BOTH SIDES OF GATE. STRIPING SHALL BE ALTERNATING RED/WHITE STRIPES, 6" WIDE AT 45 DEGREE ANGLE.
- 5. CONCRETE SHALL BE COMMERCIAL GRADE CONCRETE PER SPECIFICATION SECTION 00440.
- 6. GATE POSTS SHALL BE LOCATED OUTSIDE OF THE ROADWAY. IF PAVEMENT AND CURBS ARE PRESENT, GATE POSTS SHALL BE LOCATED BEHIND CURB.
- 7. COORDINATE INSTALLATION OF KNOX PADLOCK WITH CITY OF BEND FIRE DEPARTMENT.

		CITY OF BEND	FIRE GATE	STD DWG W-21
			· ·	APPR
			710 NW WALL ST., BEND, OREGON 97701	
REV	1		STANDARD DRAWING	DATE 12/10/21
_	WATER	(CD)	CITY OF BEND	SCALE NTS

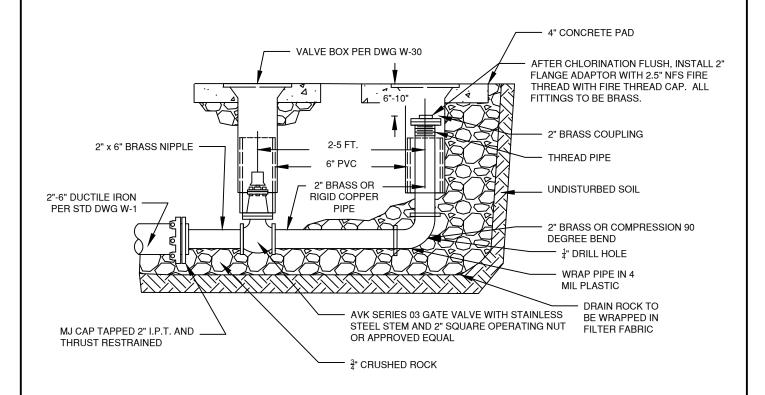
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- GATE VALVE, METER, REDUCED PRESSURE BACKFLOW ASSEMBLY & DOUBLE CHECK VALVE ASSEMBLY, & BOX WILL BE SUPPLIED & SET UP BY THE CITY WATER DEPT @ THE CONTRACTORS REQUEST AFTER OBTAINING A CITY HYDRANT PERMIT
- 2. HYDRANT PERMIT HOLDER TO PROTECT THE ENTIRE UNIT FROM FREEZING
- 3. BACKFLOW ASSEMBLY MUST BE TESTED IF UNIT IS MOVED TO ANOTHER LOCATION.

		CITY OF BEND	HYDRANT PERMIT/FILLING TANKER TRUCK	STD DWG W-22
				APPR
	5/112		710 NW WALL ST., BEND, OREGON 97701	5/112 12/10/21
-	DATE	(QLIIN)	STANDARD DRAWING	DATE 12/10/21
-	N AJD WATER	(CD)	CITY OF BEND	SCALE NTS

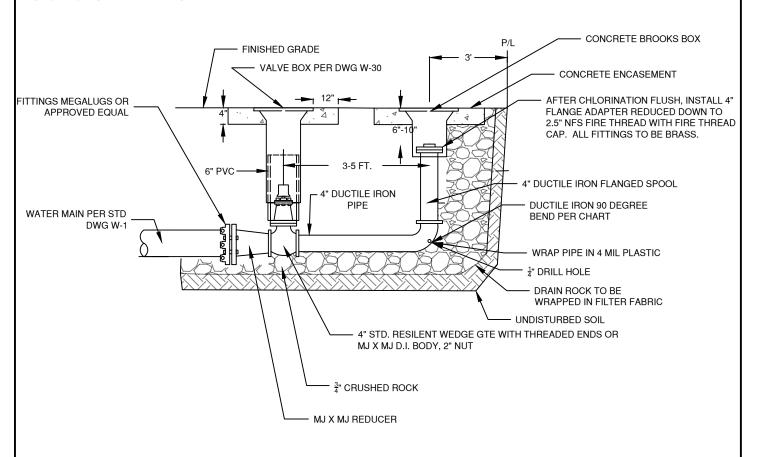
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- 1. USE CITY STANDARD VALVE BOXES, LIDS, AND 6" PVC EXTENSION.
- 2. BLOW-OFF UNIT SHALL BE BACKFILLED WITH 3/4" MINUS CRUSHED ROCK. ALL COMPACTION TO COMPLY WITH SPECIFICATION SECTION 00330.43 AND 00405.46(C).
- 3. TEMPORARY BLOW-OFF IS ONE REMOVED AT THE END OF WATER LINE TESTING AND INSTALLATION AND PRIOR TO PROJECT PAVING. A PERMANENT BLOW-OFF REMAINS ON THE PROJECT AFTER ACCEPTANCE.
- 4. PLACE BLOW-OFF STANDPIPE 3' INSIDE ROW LINE AT THE END OF STREET (2' FROM BARRICADE).
- 5. USE CITY STANDARD VALVE BOX, LID, AND 6" PVC EXTENSION FOR BLOW-OFF VALVE.
- 6. BLOW OFF RISER TO BE ONE CONTINUOUS PIECE.
- 7. USE EBAA IRON "MEGALUG" OR APPROVED EQUAL RETAINER GLAND ON MJ CAP. RESTRAIN PER ENGINEER.
- 8. 2" PVC PLUG WITH SQUARE NUT TO BE HAND TIGHTENED ONLY.

		CITY OF BEND	STANDARD 2" BLOW-OFF ASSEMBLY	STD DWG W-23
			· · ·	APPR
REV	DATE		710 NW WALL ST., BEND, OREGON 97701	DATE 12/10/21
-			STANDARD DRAWING	DATE 40/40/04
_	N AJD WATER	(CD)	CITY OF BEND	SCALE NTS

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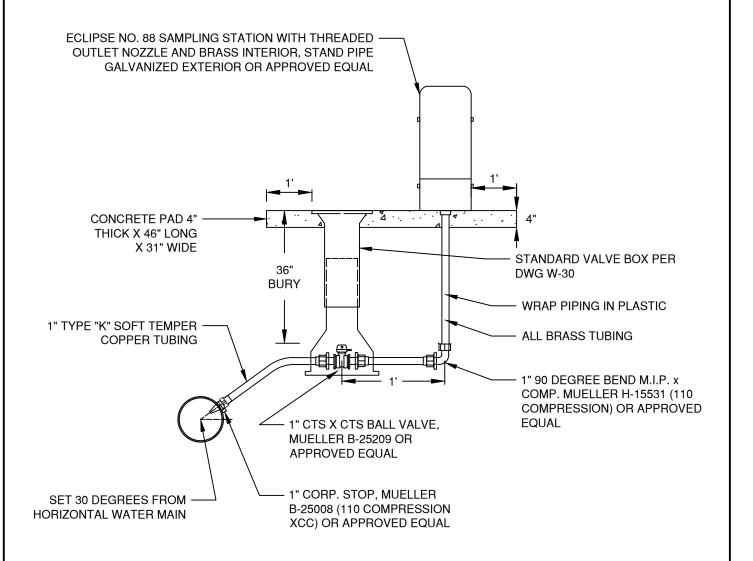


BLOW OFF SIZES REQUIRED				
MAIN SIZE	BLOW OFF SIZE			
6" AND BELOW	2" (SEE DWG W-23)			
8" - 12"	4"			
ABOVE 12"	HYDRANT			

- 1. USE CITY STANDARD VALVE BOXES, AND LIDS.
- 2. BLOW-OFF UNIT SHALL BE BACKFILLED WITH 3/4" MINUS CRUSHED ROCK. ALL COMPACTION TO COMPLY WITH SPECIFICATION SECTION 00330.43 AND 00405.46(C).
- 3. TEMPORARY BLOW-OFF IS ONE REMOVED AT THE END OF WATER LINE TESTING AND INSTALLATION AND PRIOR TO PROJECT PAVING. A PERMANENT BLOW-OFF REMAINS ON THE PROJECT AFTER ACCEPTANCE.
- 4. PLACE BLOW-OFF STANDPIPE 3' INSIDE ROW LINE AT THE END OF STREET (2' FROM BARRICADE).
- 5. USE CITY STANDARD VALVE BOX, LID, AND 6" PVC EXTENSION FOR BLOW-OFF VALVE.
- 6. BLOW OFF RISER TO BE ONE CONTINUOUS PIECE.
- 7. USE EBAA IRON "MEGALUG" OR APPROVED EQUAL RETAINER GLAND ON MJ CAP. RESTRAIN PER ENGINEER.

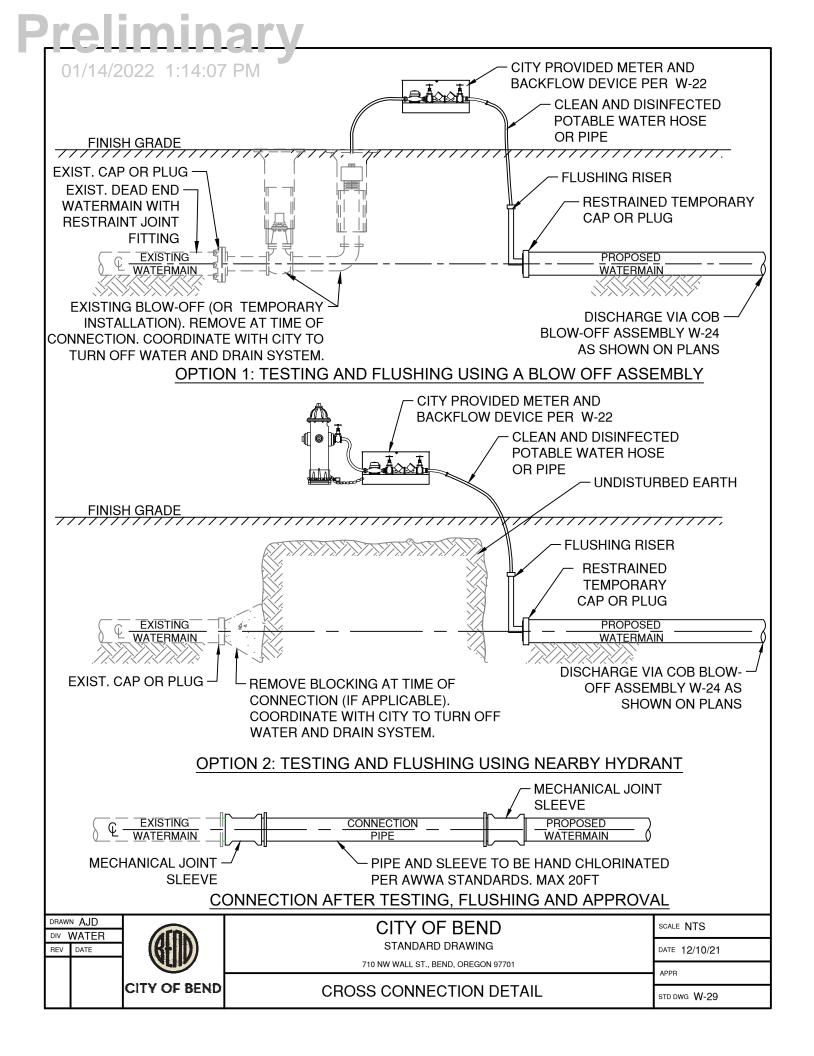
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_	EV DATE	(GHID)	STANDARD DRAWING	DATE 12/10/21
		(UI)	710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	4" BLOW-OFF DETAIL	STD DWG W-24

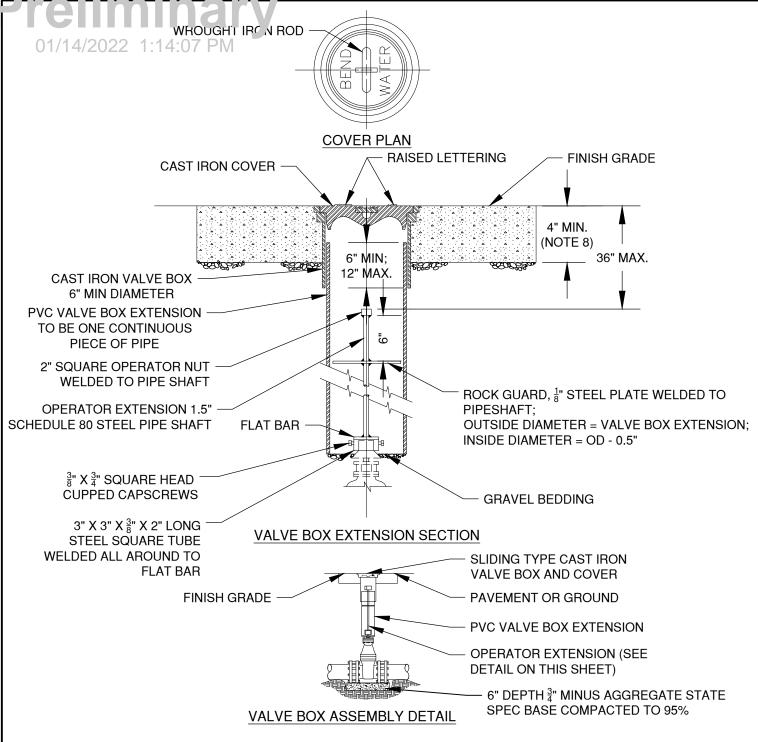
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- 1. ALL PIPE AND STRUCTURES SHALL BE BACKFILLED WITH SCREENED MAX \(\frac{3}{4}\)" MINUS CRUSHED ROCK. ALL COMPACTION TO COMPLY WITH SPECIFICATION SECTION 00330.43 AND 00405.46(C).
- 2. SET STATION AT LOT LINE UNLESS OTHERWISE SPECIFIED.
- 3. WHEN CROSSING, CATHODICALLY PROTECTED SYSTEM, INSTALL COPPER IN PVC SLEEVE FOR 5' EACH SIDE OF THE CROSSING.
- 4. WHERE NO SIDEWALK EXISTS, PLACE CONC. PAD AS SHOWN. WHERE SIDEWALKS EXIST, PLACE MIN. 12" AROUND BACK OF SAMPLE STA. AND INCORPORATE INTO NEW SIDEWALK POUR.

_	WATER  DATE		CITY OF BEND STANDARD DRAWING	SCALE NTS  DATE 12/10/21
NEV	DATE	QUI	710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	STANDARD WATER SAMPLING STATION	STD DWG W-25



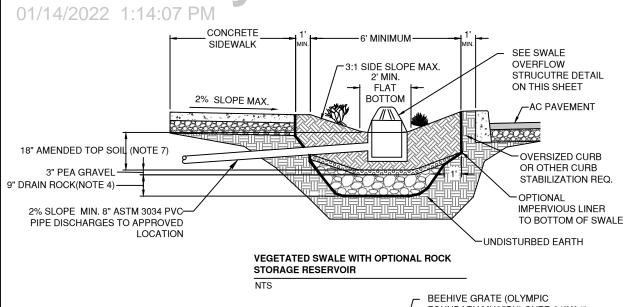


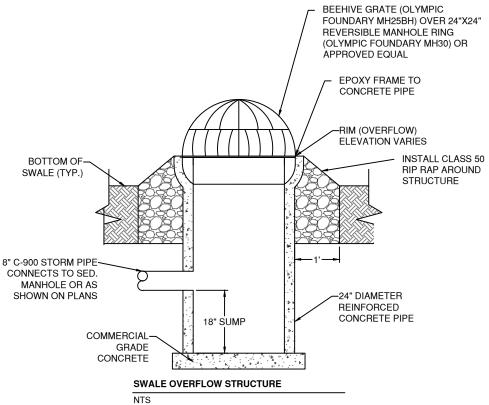
- 1. VALVE BOX NOT TO REST ON OPERATING ASSEMBLY.
- 2. OPERATOR EXTENSION REQUIRED WHEN VALVE NUT IS DEEPER THAN 6' FROM FINISH GRADE.
- 3. CENTER VALVE BOX ON AXIS OF OPERATOR NUT.
- VALVES TO BE INSTALLED WITH COMPACTED AGGR. BASE ON UNDISTURBED GROUND.
- 5. WELDS SHALL BE MINIMUM 0.5" ALL AROUND.
- 6. HOT DIP GALVANIZE OPERATOR EXTENSION AFTER FABRICATION.
- 7. CASTING SHALL MEET H20 LOAD REQUIREMENT.
- 8. PROVED 24"x24"x4" CONCRETE PAD WITH EXPANSION JOINT AROUND VALVE BOX WHEN INSTALLED OUTSIDE OF ROADWAY.
- 9. SEE PROJECT PLANS FOR DETAILS NOT SHOWN.
- 10. ALL VALVE BOXES SHALL BE PLACED OUTSIDE THE PATH OF TRAVEL ON SIDEWALK AND DRIVEWAY APRONS.

_	N AJD WATER	ATTO	CITY OF BEND	SCALE NTS
REV	DATE	<b>(6HID)</b>	STANDARD DRAWING	DATE 12/10/21
			710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	VALVE BOX AND OPERATOR EXTENSION ASSEMBLY	STD DWG W-30



# CITY OF BEND STANDARD DRAWINGS Stormwater (STRM)

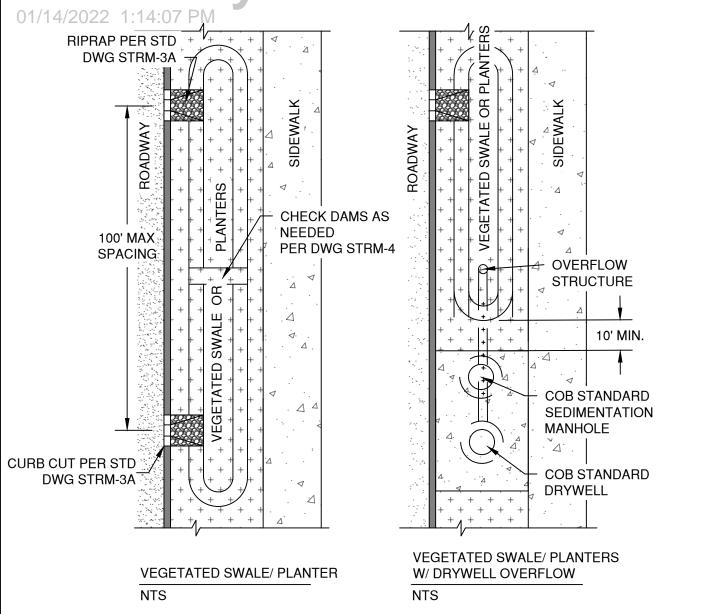




- 1. AMENDED TOPSOIL SHALL CONTAIN 20-30% TOPSOIL, 50-65% CLEAN SAND AND 5-20% COMPOST OR PEAT MOSS.
- 2. VOLUME AND DEPTH TO BE DETERMINED BY ENGINEER.
- 3. DRAIN ROCK AS REQUIRED FOR DRAINAGE CAPACITY. PEA GRAVEL TO BE USED TO PREVENT SOIL MIGRATION INTO DRAINAGE LAYER.
- 4. OPTIONAL ROCK RESERVOIR TO BE CONSTRUCTED WITH WASHED DRAIN ROCK WITH 40% VOIDS. NOT TO BE USED IN TREE WELLS.
- 5. AVOID COMPACTING SWALE AREA DURING CONSTRUCTION.
- 6. ADD HIGH POINT FLOW BYPASS TO AN APPROVED DISPOSAL POINT AS NECESSARY. OVERFLOW SHOULD PASS THROUGH A SEDIMENTATION MANHOLE OR PRE-TREATMENT PRIOR TO DISCHARGING TO A DRYWELL OR UIC.
- 7. AMENDED TOP SOIL CAN BE REPLACED WITH DRAIN ROCK FOR ROCK SWALES. ROCK SWALES CANNOT BE USED TO MEET PRETREATMENT REQUIREMENTS.
- 8. INSTALL CHECK DAMS AS REQURED AND PER DWG STRM-4.

 <sup>™</sup> AJD STORM	(ID)	CITY OF BEND	SCALE NTS
DATE	<b>(6HD)</b>	STANDARD DRAWING	DATE 12/10/21
		710 NW WALL ST., BEND, OREGON 97701	APPR
	CITY OF BEND	VEGETATED SWALE DETAIL	STD DWG STRM-2

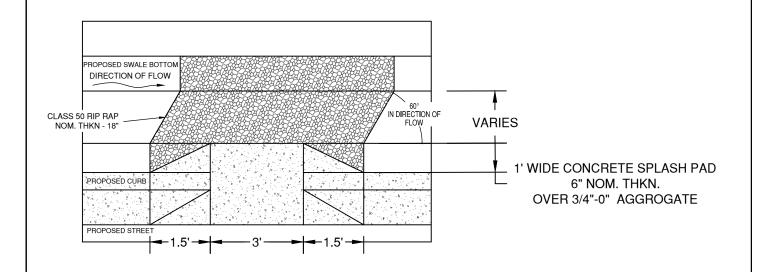
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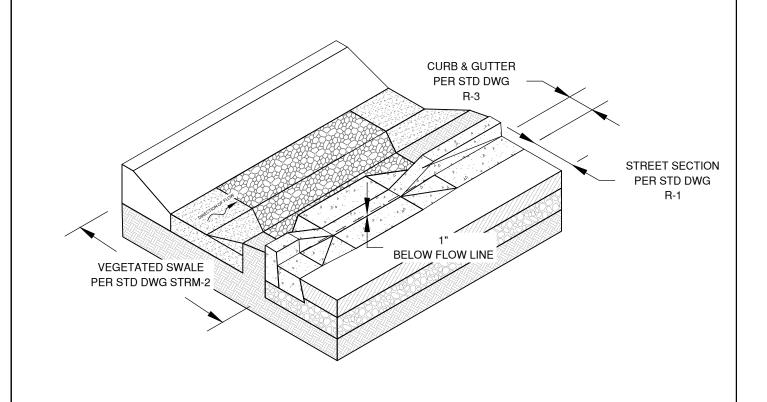


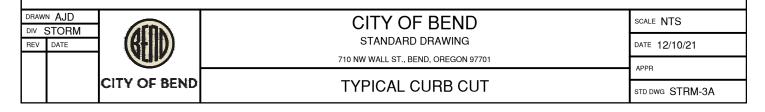
- 1. SWALE/SURFACE INFILTRATION FACILITIES NOT PERMITTED WITHIN PUES OR OVER FRANCHISE UTILITIES.
- 2. VOLUME AND DEPTH TO BE DETERMINED BY ENGINEER

	N AJD STORM	<b>AFD</b>	CITY OF BEND	SCALE NTS
REV	DATE	(((11))	STANDARD DRAWING	DATE 12/10/21
		<b>VUID</b>	710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	TVDICAL CMALE LAVOLIT	
		CITY OF BEND	TYPICAL SWALE LAYOUT	STD DWG STRM-3

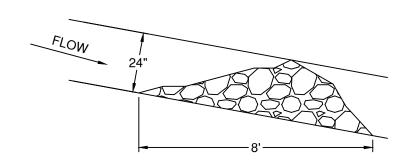
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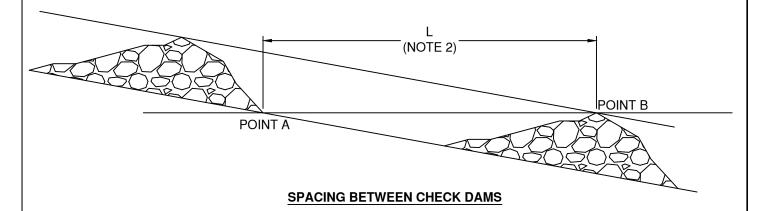




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18" MIN (NOTE 1)
6" MIN
24"
CHANNEL CROSS SECTION

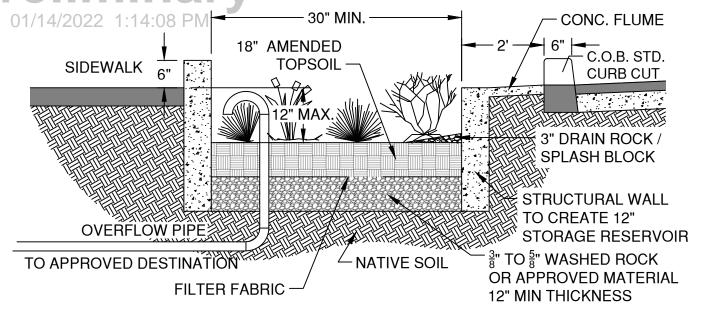


#### **CHECK DAM PROFILE**

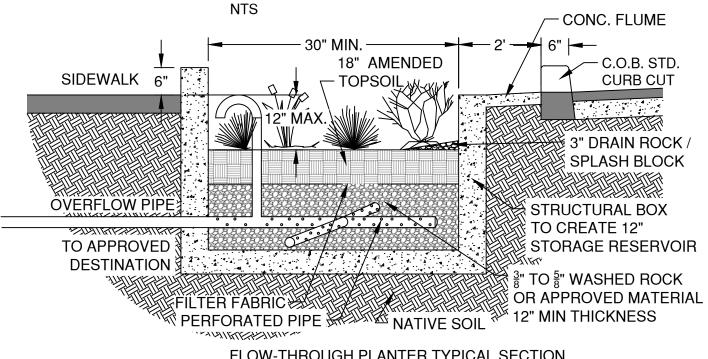


- 1. KEY STONE INTO THE CHANNEL BANKS AND EXTEND DAM A MINIMUM OF 18" TO PREVENT FLOW AROUND DAM.
- 2. L IS EQUAL TO THE DISTANCE SUCH THAT 'POINT A' AND 'POINT B' ARE OF EQUAL ELEVATION.
- 3. CHECK DAMS SHALL BE INSTALLED PER CENTRAL OREGON STORMWATER MANUAL (COSM) REQUIREMENTS.

	N LJC STORM		CITY OF BEND	SCALE NTS
REV	DATE	(GHID)		DATE 12/1/17
		VLIIV	710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	CHECK DAM DETAIL	STD DWG STRM-4



#### INFILTRATION PLANTER TYPICAL SECTION

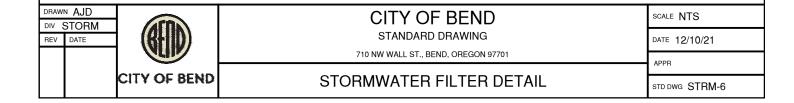


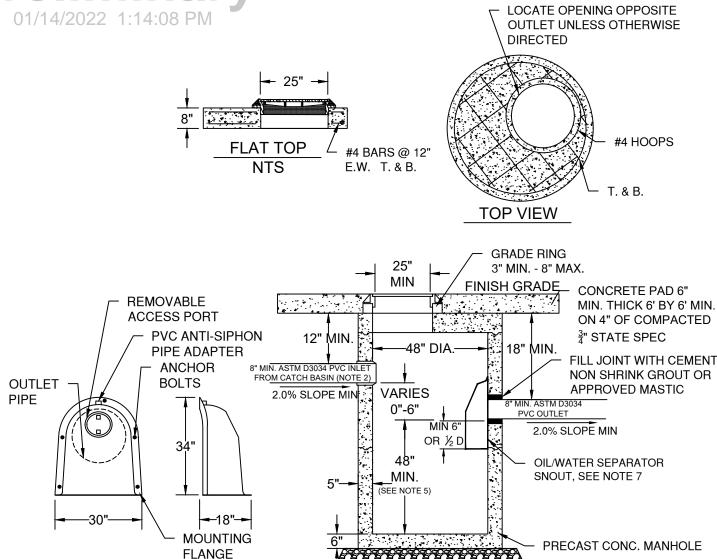
# FLOW-THROUGH PLANTER TYPICAL SECTION NTS

- 1. NOT FOR USE ALONG STREETS WITH POSTED SPEED ABOVE 25 MPH, UNLESS OUTSIDE THE CLEAR ZONE.
- 2. AMENDED TOPSOIL PER SPECIFICATION 01040
- 3. VOLUME AND DEPTH TO BE DETERMINED BY ENGINEER.
- 4. USE INFILTRATION PLANTER IF EXISTING SITE HAS AN INFILTRATION RATES > 0.5 IN/HR.
- 5. PLACE OVERFLOW PIPE 2" BELOW TOP OF PLANTER.
- 6. TO AVOID UIC REGULATION DO NOT USE PERFORATED PIPE OUTSIDE OF THE FLOW-THROUGH PLANTER OR WITH THE INFILTRATION PLANTER.

		CITY OF BEND	STORMWATER PLANTER DETAIL	STD DWG STRM-5
		4		APPR
			710 NW WALL ST., BEND, OREGON 97701	12,10,21
RE	-	(QLIIN)	STANDARD DRAWING	DATE 12/10/21
DIV	WN AJD STORM	ACD.	CITY OF BEND	scale NTS

01/14/2022 1:14:08 PM **EDGE OF AC** OR ROADWAY FLOW SPREADER SHOULDER TO EXTEND ENTIRE egi bilini LENGTH OF ASPHALT 5% MAX LATERAL SLOPE Α AMENDED TOPSOIL ONTRIBUTI **PLAN VIEW** 18" FOR EACH NTS 30' TO 50' OF **CONTRIBUTING** 4' MIN. **FLOW PATH** (SEE NOTE 1) 1-1/2" WASHED DRAIN ROCK **AC ROADWAY 5% MAX** 6:1 SLOPE MAX. **AMENDED TOPSOIL** FLOW SPREADER OR **GRAVEL FILLED TRENCH** (OPTIONAL - SEE NOTES) NATIVE SOIL NOTES: 1. MIN. FILTER STRIP LENGTH IS; 4' FOR A 10' FLOW PATH, 4.5' FOR A 25' FLOWPATH AND 5.5' FOR A 30' FLOWPATH AMENDED TOPSOIL PER SPECIFICATION 2. **SECTION A-A** 01040 FLOW SPREADER IS OPTIONAL. IF USED THE NTS GRAVEL MUST BE WIDER THAN DEEP TO AVOID UIC REGULATIONS.





#### NOTES:

1. ALL PRE-CAST SECTIONS SHALL CONFORM TO REQUIREMENTS OF ASTM C-478.

SNOUT OIL-WATER-DEBRIS SEPARATOR

NTS

- 2. AWWA C900 PIPE SHALL BE USED WITHIN TRAVEL AREAS. ASTM D3034 PIPE WHERE STORM PIPE WILL BE INSTALLED PERSANITARY SEWER REQUIREMENTS OR OUTSIDE OF TRAVEL AREAS.
- MANHOLES SHALL BE PLACED OUTSIDE SIDEWALK, APRONS & STREET SURFACES UNLESS APPROVED BY THE CITY ENGINEER.

SECTION A-A

NTS

6" MIN. DEPTH OF 1" OR  $\frac{3}{4}$ "

CRUSHED ROCK

**COMPACTED TO 95%** 

- 4. A 3 POINT MECHANICAL ADJUSTMENT SYSTEM SUCH AS RAD'S OR APPROVED EQUAL SHALL BE USED TO ADJUST MANHOLE FRAME AND COVER TO FINISH GRADE.
- 5. SUMP SIZE TO BE DESIGNED IN ACCORDANCE WITH COSM 20 CF OF SUMP VOLUME FOR EACH 1.0 CFS DESIGN FLOW NOT LESS THAN 48" DEPTH.
- 6. MANHOLES WITH MORE THAN 3 CONNECTIONS, OR PIPES 12" OR LARGER TO BE 60" MANHOLES
- 7. OIL/WATER SEPARATOR SNOUT BMP 24R, OR APPROVED EQUAL. SECURE TO MANHOLE WITH FIVE  $(5)_8^3$ "x1-12" STAINLESS STEEL RED HEAD BOLTS, WASHERS AND NUTS, OR AS APPROVED BY MANUFACTURER.

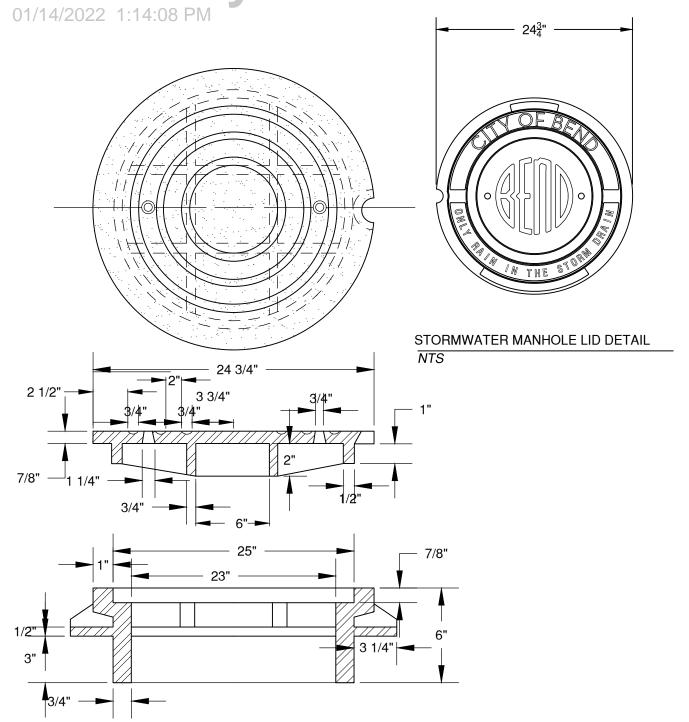
_	NN AJD STORM	(FD)	CITY OF BEND	SCALE NTS
REV	DATE	(GHID)	STANDARD DRAWING	DATE 12/10/21
		<b>UII</b>	710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	STORMWATER SEDIMENTATION MANHOLE	STD DWG STRM-7

AST IRON MANHOLE  $\frac{1}{2}$ " x 12" ANCHOR BOLT, 1 / ADJUSTMENT RING ... WITH NUT, GALV. (TYP.) (WITH 1 1/2" RISE) AND 12 - #5 VERT. BARS E+2" COVER (SEE GENERAL #3 L BARS @ 6" MAX. CTRS. NOTE 8) TOP OF CURB 2" CLR.--Ε NORMAL GUTTER LINE **GUTTER LINE** CURB BOTTOM CURB VAR. 8" TO 16" & GUTTER 6" CAST IRON MANHOLE NORM. (MAY BE ADJUSTMENT RING (WITH INCREASED TO 1 1 RISE) AND COVER 48" IF REQ'D.) 8"-2-#6 BARS X CONT. #3 TOP BARS x #6 BARS (BOTH 1 - #5 HOOP EA. SIDE @ 4" CTRS. WAYS, UNDER CONT. EA. WAY #6 BAR EA. SIDE @ 6" MAX. CTRS. **MANHOLE ADJUSTMENT** ½" x 12" ANCHOR RING) 2.0% BOLT, WITH NUT, 48" DIAMETER #4 HOOP BAR GALV. (TYP.) **MANHOLE** (UNDER THE #3 TOP 2 - #6 BARS) SEE STD DWG STRM-7 BARS x CONT. #3 BARS FOR SEDIMENTATION EA. WAY @ #3 BARS 2'-0" MANHOLE BASE DETAIL 6" MAX. CTRS. 2" CL SECTION A-A 5 - #6 BARS x #5 HOOPS CONT. @ 4" #6 BARS CTRS. #3 L BARS @ 6" MAX. 12 - #5 VERT. BARS CTRS STAGGER SPLICE LOCATION 48" DIAMETER **MANHOLE** SEE STD DWG STRM-7 В В FOR SEDIMENTATION MANHOLE BASE DETAIL **SECTION B-B** 2 - #6 BARS @ 4" CTRS. EA. SIDE (BTM.) 4 - #6 BARS @ 4" THIS SEDIMENTATION MANHOLE OPTION IS USED WHEN 2 - #6 BARS (BTM.) CTRS. (BTM.) 1 - #5 HOOP A CATCH BASIN OR INLET ARE PROPOSED AND A CONFLICT EXISTS PREVENTING INSTALLATION OF THE STANDARD SEDIMENTATION MANHOLE (STRM-7). NOTES: 1.

- ALL REINFORCEMENT TO BE PLACED A MINIMUM OF 2" CLEAR OF NEAREST FACE OF CONCRETE UNLESS OTHERWISE SHOWN OR NOTED.
- 2. ALL PRECAST PRODUCTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C478.
- ALL CONCRETE SHALL BE COMMERCIAL GRADE CONCRETE.
- INLET TOP MAY BE CAST-IN-PLACE OR PRECAST. ALL PRECAST INLETS SHALL CONFORM TO REQUIREMENTS OF ASTM C913.
- 5. VARY ANCHOR BOLT LENGTH AND REINFORCING BAR PLACEMENT AS REQUIRED BY CURB EXPOSURE E.
- 6. SEE COB STD DWG R-3 FOR CURB DETAILS.
- 7. SEE ODOT STD DWG RD356 FOR MANHOLE ADJUSTMENT RING. SEE COB STD DWG STRM-8 FOR CAST IRON MANHOLE ADJUSTMENT RING AND COVER.
- 6. SUMP SIZE TO BE DESIGNED IN ACCORDANCE WITH COSM 20 CF OF SUMP VOLUME FOR EACH 1.0 CFS DESIGN FLOW NOT LESS THAN 48" DEPTH.

	STORM	<b>Arns</b>	CITY OF BEND	SCALE NTS
RE		i ( <b>(8111)</b> )	STANDARD DRAWING	DATE 12/10/2021
			710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	OTODANAATED OEDIMENTATIONIAAANIJOLE. ALTEDAIATE	
		OILL OF DEAD	STORMWATER SEDIMENTATION MANHOLE - ALTERNATE	STD DWG STRM-7A

<u>Preliminary</u>



- MANHOLE LID ONLY TO BE USED ON CITY OF BEND PUBLIC DRYWELLS AND SEDIMENTATION MANHOLES.
   PRIVATELY OWNED DRYWELLS AND SEDIMENT MANHOLES SHALL NOT USE A CITY OF BEND MANHOLE LID.
- 2. HINGED MANHOLE LIDS ARE NOT PERMITTED UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
- ALL MANHOLE LIDS SHALL BE PLACED OUTSIDE THE PATH OF TRAVEL OF SIDEWALKS AND DRIVEWAY APRONS.

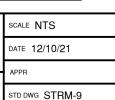
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REV	DATE	(GHID)	STANDARD DRAWING	DATE 12/10/21
		Cliv	710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	STORMWATER MANHOLE LID DETAIL	STD DWG STRM-8

01/14/2022 1:14:08 PM #6 BARS (BOTH WAYS, UNDER MANHOLE ADJUSTMENT RING) B◆ #4 HOOP BAR (UNDER THE 2 - #6 BARS) CAST IRON MANHOLE ADJUSTMENT 6" RAD. #3 BARS RING (WITH 1 ½" RISE) AND COVER (TYP.) **CURB BATTER** GUTTER TOP OF CURB 191 10 ¼" RAD. IRB AND -GUTTER LINE (TYP.) **GALVANIZED FACE PLATE** #3 BARS, PROJECT To" INTO GUTTER -1/2"X 12" ANCHOR BOLT, B♣l WITH NUT, GALV. (TYP.) PAN (BEND TO MATCH GUTTER PAN. SEE SECTION B-B) **PLAN VIEW** SEE KEYWAY **CURB AND GUTTER CURB AND GUTTER DETAIL BELOW** R6" **FILL JOINT** FILL JOINT WITH NON WITH NON SHRINK GROUT OR **SHRINK** APPROVED MASTIC **GROUT OR** 4 4 4 ٥ **APPROVED MASTIC** ---2'-0"-2'-6"--3'-6"--3'-0"-SECTION B - B SECTION A - A NOTES: 1. REMOVE SUFFICIENT CURB TO POUR BACK WALL. TOP SECTION MAY BE POURED MONOLITHIC WITH SIDEWALK. 2. CURB INLETS TO BE USED ON ARTERIAL AND COLLECTOR ROADWAYS. **KEYWAY DETAIL** 3. "E" = CURB E DRAWN AJD BEND SCALE NTS DIV STORM

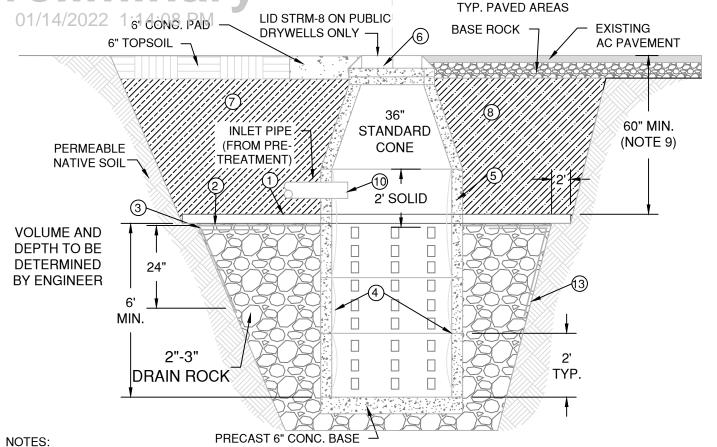
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Arn.	CITY OF BEND
(6111))	STANDARD DRAWING
Cul.	710 NW WALL ST., BEND, OREGON 97701

REV DATE

CITY OF BEND STANDARD CATCH BASIN SPECIAL INLETS

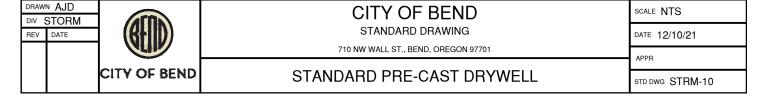


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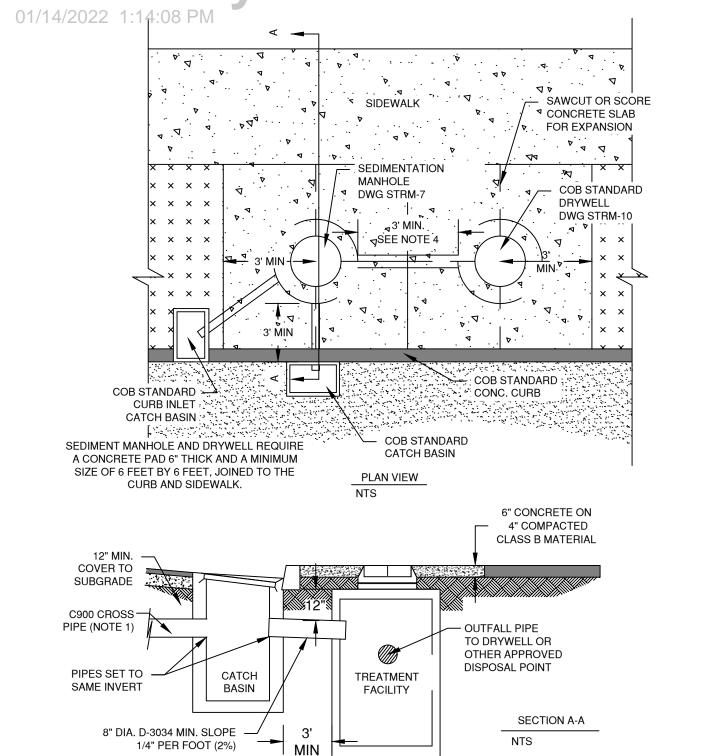


\* SEE ALSO THE CITY OF BEND STANDARDS AND SPECIFICATIONS FOR DESIGN CRITERIA

- 6" CONCRETE CAP, CL. 3000, EXTEND TO UNDISTURBED MATERIAL 2' MIN. REQUIRED WITHIN ALL CITY OF BEND RIGHT OF WAY UNLESS NOTED OTHERWISE.
- 2. MOISTURE BARRIER-2 LAYERS OF 4 MIL POLY. ON ALL ROCK INSTALLATIONS.
- 3. NONWOVEN GEOFABRIC CONFORMING TO DRAINAGE GEOTEXTILE, OREGON TABLE 02320-1 REQUIRED ON ALL EARTH OR GRAVEL EXCAVATIONS TO 24" INTO ROCK. LAP 24" WITH MOISTURE BARRIER.
- 4. LINE INSIDE OF PERFORATED BARREL WITH HEAVY WEIGHT VINYL SCREEN, SUCH AS FULL FLOW VINYL SCREEN THAT MEETS THE REQUIREMENTS OF SPECIFICATION SECTION 00470. LINER SHALL BE FULLY AND CONTINUOUSLY ANCHORED, TOP AND BOTTOM OF EACH SECTION. ATTACH BY OVERLAPPING 12" MIN. BETWEEN JOINT OF MANHOLE CONE AND PERFORATED BARREL SECTION. INLET PIPE SHALL BE EXTENDED THROUGH THE SCREEN IF SCREEN IS ATTACHED ABOVE THE PIPE.
- PRE-CAST SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-478. ALL CONCRETE SHALL BE COMMERCIAL GRADE CONCRETE
- STANDARD RING AND COVER REQUIRED IN RIGHT-OF-WAY AREAS. NO SLOTTED COVERS WILL BE ALLOWED IN LIEU OF A CATCH BASIN.
- 7. CLASS "A" BACKFILL COMPACTED TO 95.0% OPTIMUM DRY DENSITY (AASHTO T-99).
- 8. CLASS "B" BACKFILL COMPACTED TO 95.0% OPTIMUM DRY DENSITY (AASHTO T-99).
- 9. PERFORATIONS TO BE 60" BELOW EXISTING UNDISTURBED GROUND.
- 10. INLET PIPE MUST BE DESIGNED SO IT CAN BE PLUGGED IN CASE OF SPILL. ALL PIPE PENETRATIONS ARE TO BE GROUTED OR WATER-TIGHT SEALED. PIPE INLETS NOT TO ENTER DRYWELL WITH PERFORATED BARREL.
- 11. DRYWELL RIMS TO BE PLACED OUTSIDE OF SIDEWALK, APRON & STREET SURFACES UNLESS APPROVED BY THE CITY ENGINEER.
- 12. PLANS SHALL PROVIDE VOLUME AND AREA OF ROCK PLACEMENT. ROCK PLACEMENT SHALL BE OUTSIDE WATER/SEWER TRENCHES. WHERE ROCK ENTERS PRIVATE PROPERTY, A DRAINAGE EASEMENT SHALL BE RECORDED.
- 13. GEOFABRIC TO BE EXTENDED FROM THE CONCRETE CAP TO BOTTOM OF DRYWELL STRUCTURE. WHERE THE EXCAVATION IS WITHIN SOLID ROCK (NO SIDEWALL SLOUGHING), GEOFABRIC CAN BE WAIVED AT ENGINEER'S DISCRETION

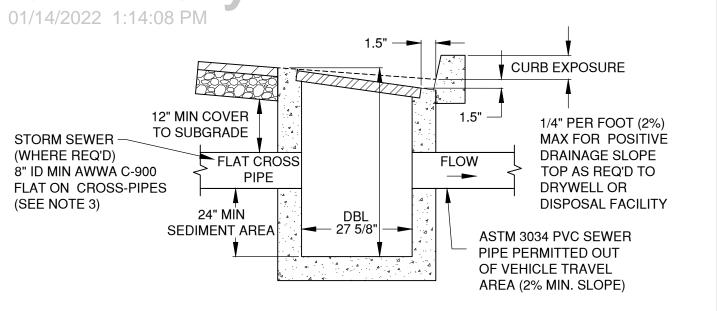


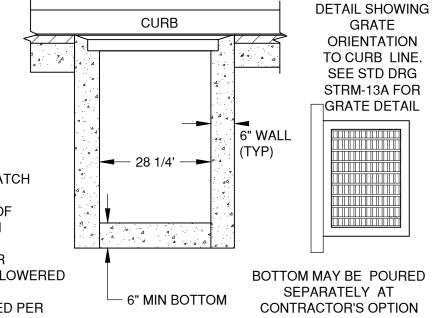
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- 1. CROSS PIPE ELEV MAY REQUIRE OTHER UTILITIES (SEWER, WATER, ETC) TO BE LOWERED TO PROVIDE MINIMUM SEPARATIONS
- 2. ALL PIPE PENETRATIONS ARE TO BE GROUTED OR WATER TIGHT SEALED.
- 3. DRYWELL AND TREATMENT FACILITY NOT TO BE PLACED IN DRIVEWAY OR SIDEWALK UNLESS APPROVED BY THE CITY ENGINEER.
- ${\tt 4.} \ \ {\tt WHEN} \ {\tt DRY} \ {\tt UTILITIES} \ {\tt WILL} \ {\tt BE} \ {\tt INSTALLED} \ {\tt BETWEEN} \ {\tt STRUCTURES}, \ {\tt PROVIDE} \ {\tt MINIMUM} \ {\tt 5'} \ {\tt SEPARATION}.$

	STORM	ALUX.	CITY OF BEND	SCALE NTS
REV	DATE		STANDARD DRAWING	DATE 12/10/21
			710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	DRYWELL W/ MANUFACTURED TREATMENT LAYOUT	STD DWG STRM-11



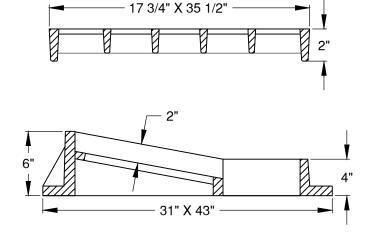


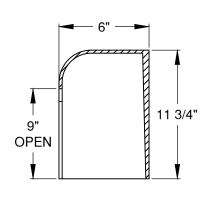
- 1. UNLESS OTHERWISE SPECIFIED, ALL CATCH BASINS TO BE DOUBLE CATCH BASIN
- 2. BACKFILL TO BE COMPACTED TO 95% OF OPTIMUM PER SPECIFICATION SECTION 00330.43
- 3. CROSS PIPE ELEV MAY REQUIRE OTHER UTILITIES (SEWER, WATER, ETC) TO BE LOWERED TO PROVIDE MINIMUM SEPARATIONS
- 4. ALL PIPE CONNECTIONS TO BE GROUTED PER SPECIFICATION SECTION 00470.40
- 5. CONTRACTOR IS RESPONSIBLE TO KEEP CATCH BASIN CLEAN AND FREE OF SEDIMENT DURING CONSTRUCTION
- 6. CONTRACTOR IS RESPONSIBLE TO COVER AND BARRICADE ALL CATCH BASINS UNTIL GRATE IS INSTALLED
- 7. STANDARD CATCH BASINS ARE LIMITED TO LOCAL STREETS AND SHALL NOT BE USED ON ARTERIAL & COLLECTOR ROADWAYS. CURB INLETS ARE TO BE USED ON ARTERIAL & COLLECTOR ROADWAYS.
- 8. SEE DRG R-11 FOR PAVEMENT RESURFACING

_	<sup>™</sup> AJD STORM	<b>ATTA</b>	CITY OF BEND	SCALE NTS
REV	DATE	(GHID)	STANDARD DRAWING	DATE 12/10/21
			710 NW WALL ST., BEND, OREGON 97701	APPR
	CITY OF BEND	STANDARD CATCH BASIN	STD DWG STRM-12	

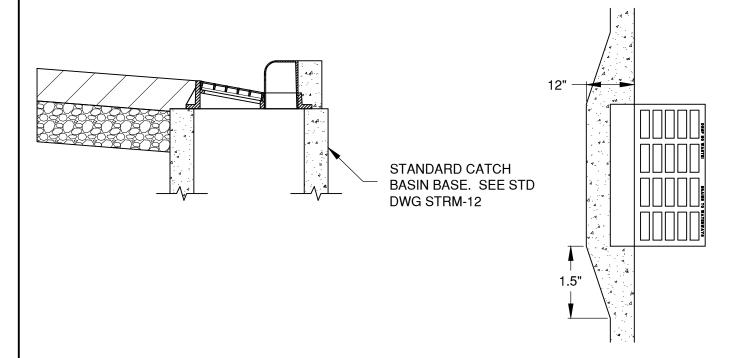
27 3/8" 28 3/4"  $\mathsf{D} \blacktriangleleft \mathsf{J}$  $-\frac{1}{2}$  X 2-1/2 FLAT BAR 3/16" -31 3/4" -SECTION D-D 2 5/8" 3/8 X 3 X 2-1/2 ANGLE 1/4" **SECTION C-C** STEEL FRAME DUMP NO WASTE! DRAINS TO WATERWAYS 1 1/4" 13 3/8" 3/4" SECTION B-B 31 3/4" -2 1/2" 3/4" 5 1/4" (TYP) (TYP) **SECTION A-A DUCTILE IRON GRATE** DRAWN AJD CITY OF BEND SCALE NTS DIV STORM STANDARD DRAWING DATE 12/10/21 DATE 710 NW WALL ST., BEND, OREGON 97701 CITY OF BEND STORMWATER GRATE STD DWG STRM-13A

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### CAST IRON COMBINATION CATCH BASIN INLET



- 1. SEE NOTES ON STD DWG STRM-12
- 2. COMBINATION CATCH BASIN INLET TO BE USED ON COLLECTOR AND LOCAL STREETS WHEN THE ROAD GRADE EXCEED 6%

_	N AJD STORM	AFID	CITY OF BEND	SCALE NTS
_	DATE	(6111))	STANDARD DRAWING	DATE 12/10/21
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		CITY OF BEND	COMPINIATION CATOURDACINING ET	7(11)
		O OF BEIND	COMBINATION CATCH BASIN INLET	STD DWG STRM-13B

CURB EXPOSURE

VARIES DUE TO

PAVEMENT OVERLA

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SI NOTE: TAPER LENGTHS SHALL BE UTILIZED FOR ASPHALT PAVEMENT OVERLAY PROJECTS. ADJUST GRIND AS REQUIRED. **GRIND AND REPLACE** EXIST. PAVEMENT TAPER 10' MIN. BOTH VARIES TYP. ±1' TYP. **SIDES** TOP OF **CURB** TOP OF EXIST. **PAVEMENT** PROPOSED TOP OF PAVEMENT TO EXIST. PAVEMENT MATCH TOP OF CATCH BASIN HICKNESS VARIES GRIND AND REPLACE EXIST. AC **SECTION VIEW** PAVEMENT. (2" DEPTH) APPLY BITUMINOUS TACK COAT ON ALL SCALE: **SURFACES** HORIZONTAL: 1"=5' VERTICAL: 1"=1' EXIST. TOP OF PAVEMENT TAPER ±1' HORIZONTAL AROUND CATCH BASIN AND 1"-3" VERTICAL EXIST. EXIST. PAVEMENT **CURB** TAPER 1' TYP. **BIKE LANE** EXIST. BIKE -10'\*-LANE STRIPE \*PROPOSED TOP OF PAVEMENT TAPER. SEE SECTION DETAIL **PLAN VIEW** SCALE: VEHICLE TRAVEL HORIZONTAL: 1"=5' LANE DRAWN LJC CITY OF BEND SCALE NTS DIV STORM STANDARD DRAWING DATE 3/31/19 REV DATE 710 NW WALL ST., BEND, OREGON 97701 APPR EXISTING CATCH BASIN PAVEMENT RESURFACING CITY OF BEND STD DWG STRM-14

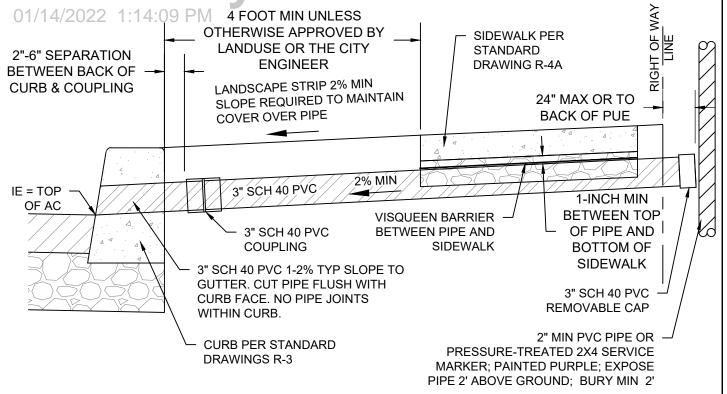
OPEN GRADED ROCK/ 01/14/2022 1:14 SEPARATION LAYER. LANDSCAPE PER PLANTING PLAN 5' 10' 3:1 MAX SLOPE -MIN MIN **DEDICATED WATER** - NATIVE SOIL ROCK-SERVICE REQ. FOR **IRRIGATION SYSTEM** 18" AMENDED TOP-SOIL NATIVE ROCK TO BE **SCARIFY SURFACE 2-3"** (SECTION A-A) FRACTURED 24" BELOW UNDISTURBED NATIVE SOIL SUB-GRADE (DO NOT COMPACT) 4' CHAIN LINK FENCE REQ. WHEN OVERFLOW DEPTH IS 3' OR MORE ABOVE THE POND BOTTOM PER **EASEMENT** COSM REQUIREMENTS OR TRACT LANDSCAPÉ PER 10" MIN. (OPTIONAL) POWER PLANTING PLAN 10' SERVICE/IRRIGATION MIN CONTROLLER DITCH INLET PER ODOT MIN. SED. MANHOLE RD370 W/ 5'X5' CLASS 50 RIP-RAP SPLASH PAD. PRE-TREATMENT **OVERFLOW STRUCTURE** PER DETAIL STRM-2 A RAMP SHALL EXTEND TO THE FACILITY BOTTOM WHEN POND BOTTOM AREA IS GREATER THAN 1,500 SQ. FT, PER COSM REQUIREMENTS. 12' MIN. ACCESS GATE PER DETAIL STRM-17 LOCATE FENCE OUTSIDE OVERFLOW DRYWELL. WHERE THE SWALE **CLEAR VISION AREA** IS PRIVATE, THE DRYWELL SHALL NOT BE PLACED IN PUBLIC RIGHT OF WAY EXTENDED DETENTION DRY POND (PLAN VIEW) NOTE: THE WATER QUALITY TREATMENT STORM SHOULD DRAIN WITHIN 48 HOURS. IF ADDITIONAL STORAGE IS INCLUDED IN THE POND FOR LARGER STORM EVENTS, THE TOTAL FACILITY SHOULD DRAIN WITHIN 72 HOURS FOLLOWING THE PEAK DESIGN STORM EVENT. DRAWN CJH CITY OF BEND SCALE NTS DIV STORM STANDARD DRAWING DATE 1/2021 REV DATE 710 NW WALL ST., BEND, OREGON 97701 APPR CITY OF BEND INFILTRATION POND DETAIL STD DWG STRM-16

TENSION WIRE **TENSION WIRE** 12' MIN GATE OPENING END CLAMP **END CLAMP** 4 **์** 11 3 12 3 10 4 FT 6 旧世 2 16" MIN. 36" 8 1 MIN. **GATE DETAIL** 10" MIN CONCRETE 12" MIN DIA. DIA. TOP RAIL TIE TOP RAIL POST TIE WIRES AT 15" O.C. WIRES AT 24" O.C. LINE POST TERMINAL **POST** STRETCHER BAR ਵ੍ਹੀ" TRUSS 4 FT THE FENCING SHALL **ROD** BE #9 GAUGE FENCE FABRIC, STANDARD HOOK 2-INCH CHAIN LINK **BOLTS** DIAMOND MESH. **BRACE RAIL** 1. MATERIALS AND WORKMANSHIP 24" MIN 36" MIN NOT SHOWN ON THIS DRAWING 10 FT MAX SHALL CONFORM TO 6" MIN **FENCE DETAIL** MANUFACTURER'S SPECS. 6" MIN ALL POSTS SHALL BE INSTALLED **CONCRETE** VERTICALLY. WHERE POSTS ARE 12" MIN 10" MIN INSTALLED ON AN INCLINED DIA. SURFACE, THE ANGLE OF THE POST DIA. SHALL BE ADJUSTED SO THAT THE POST WILL BE VERTICAL. **PART** DESCRIPTION GATE FRAME MEMBERS SIZE & WEIGHT SHAPE, SIZE AND WEIGHT REQUIREMENTS NO. **GATE LEAF** OUTSIDE WEIGHT FOR FENCE POSTS AND RAILS STRAIGHT PLUG WIDTH OF **DIMENSIONS** LBS/FT ITEM SHAPE OUTSIDE WEIGHT 2 **BOTTOM HINGE INCHES** 6 FT OR LESS DIMENSIONS LBS/FT. 3 **TOP HINGE** ROUND 1.66 2.27 **INCHES** 4 **CORNER ELBOW** \*ROUND 1.66 1.84 5 PLUNGER ROD **GRADE B HIGH STRENGTH STEEL ROUND TERMINAL** 2.375 3 65 6 LATCH FORK \*ROUND **POST** 2.375 3.12 7 FORK CATCH GATE POST SIZE AND WEIGHT LINE ROUND 1.90 2.72 8 PLUNGER ROD CATCH **POSTS** \*ROUND 2.28 1.90 OUTSIDE WEIGHT **GATE LEAF** 9 LOCK KEEPER GUIDE TOP & BRACE ROUND 1.66 2.27 WIDTH OF **DIMENSIONS** LBS/FT 10 LOCK KEEPER W/ CITY LOCK **RAILS** \*ROUND 1.66 1.84 6 FT OR LESS **INCHES** 11 ORNAMENTAL TOPS ROUND 2.875 5.79 GRADE B HIGH STRENGTH STEEL 12 TRUSS RODS INCLUDES END, CORNER, ANGLE, INTERSECTION \*ROUND 2.875 4.64 13 STRETCHER BAR AND INTERMEDIATE BRACED POSTS **HOOK BOLTS GRADE B HIGH STRENGTH STEEL** 14 DRAWN AJD CITY OF BEND SCALE NTS DIV STORM STANDARD DRAWING REV DATE DATE 12/10/21 710 NW WALL ST., BEND, OREGON 97701 APPR

CHAINLINK FENCE DETAIL

STD DWG STRM-17

CITY OF BEND



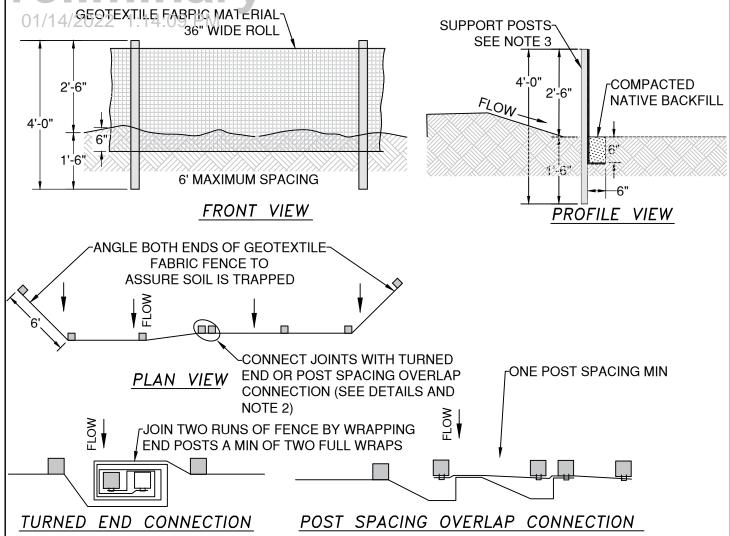
- WEEP HOLE INSTALLATION WILL ONLY BE PERMITTED WHERE APPROVED DURING LAND USE AND WHERE THE RIGHT OF WAY STORM SYSTEM WAS SIZED FOR THE ADDITIONAL STORMWATER RUNOFF.
- 2. ALL STORM PIPE IS OWNED AND MAINTAINED BY THE HOMEOWNER. THE SYSTEM MUST BE CLEANED AND REPAIRED AS NEEDED TO KEEP THE SYSTEM FUNCTIONAL. ONLY ROOF RUNOFF AND HARD SURFACE RUNOFF CAN BE CONNECTED INTO THE WEEP HOLE PIPE TO REDUCE SEDIMENTS AND DEBRIS FROM CLOGGING THE PIPE AND CURB LINE.
- 3. SEPARATION: WEEP HOLES ARE NOT PERMITTED WITHIN 4 FEET OF OTHER WEEP HOLE PENETRATION, 2 FEET FROM TOP OF DRIVEWAY, OR 2 FEET OF ANY WATER OR SEWER LATERAL. PIPE MUST BE A MINIMUM 12" FROM ANY METER BOX. WEEP HOLES AND PIPING WILL NOT BE PERMITTED WITH CURB TIGHT SIDEWALKS
- 4. WEEP HOLES WILL NOT BE PERMITTED ON ARTERIAL AND COLLECTOR ROADWAYS.
- 5. THE STORM PIPE WILL NOT BE PERMITTED WITHIN THE CONCRETE SIDEWALK. A MINIMUM 1-INCH OF AGGREGATE OVER THE PIPE AND A LAYER OF VISQUEEN BARRIER PLACED BETWEEN THE PIPE AND CONCRETE. THIS IS TO ALLOW THE SIDEWALK PANEL TO REMOVED AS NEEDED WITHOUT BRINGING THE PIPE WITH IT. THE VISQUEEN BARRIER WILL BE CUT AT OR JUST BEFORE THE EDGE OF THE SIDEWALK AND NOT EXTENDED INTO THE LANDSCAPE STRIP.
- 6. SIDEWALK CANNOT BE BONDED FOR WHEN WEEP HOLE AND STORM PIPE INSTALLATIONS ARE PROPOSED UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
- 7. ALL WEEP HOLE STORM PIPE WITHIN THE RIGHT OF WAY MUST BE 3-INCH SCHEDULE 40 PVC.
- 8. STORM PIPES MUST BE EXTENDED TO THE RIGHT OF WAY OR TO THE BACK OF ANY PUE, WHERE APPLICABLE

	™ AJD STORM	AFON.	CITY OF BEND	SCALE NTS
_	DATE	(GHID)	STANDARD DRAWING	DATE 12/10/21
		<b>VUI</b>	710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	CURB WEEP HOLE DETAIL	STD DWG STRM-18



# CITY OF BEND STANDARD DRAWINGS Erosion (E)

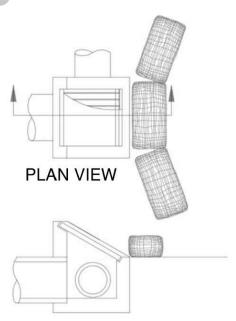
<u>Preliminary</u>



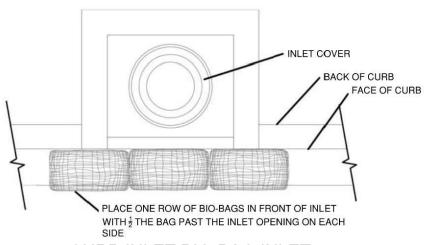
- FABRIC WITHOUT SEWN-IN SLEEVES IS NOT RECOMMENDED. IF USED, INSTALL FENCE POSTS PER MANUFACTUER RECOMMENDATIONS.
- 2. THE GEOTEXTILE FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, GEOTEXTILE SHALL BE SPLICED TOGETHER AT A SUPPORT POST UTILIZING A TURNED END OR POST SPACING OVERLAP CONNECTION.
- 3. THE FENCE POSTS SHALL BE SPACED A MAXIMUM OF 6 FEET APART AND INSTALLED INTO THE GROUND 18 INCHES MIN. FENCE POSTS SHALL BE 2" X 2" FIR, PINE, OR STEEL. THE GEOTEXTILE FABRIC FENCE SHALL BE INSTALLED TO FOLLOW THE SLOPE CONTOURS, TO MAXIMIZE PONDING EFFICIENCY WHERE FEASIBLE.
- 4. BURY BOTTOM OF THE GEOTEXTILE FABRIC 6 INCHES BELOW GRADE, BACKFILL AND COMPACT.
- 5. POSTS SHALL BE INSTALLED WITHIN THE SLEEVE ON THE UPHILL SIDE GEOTEXTILE FABRIC.
- GEOTEXTILE FABRIC FENCE SHALL BE REMOVED WHEN IT HAS SERVED ITS USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY PROTECTED AND STABILIZED.
- GEOTEXTILE FABRIC FENCES SHALL BE INSPECTED BY APPLICANT/CONTRACTOR AFTER EACH RAIN OR SNOW EVENT AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
- 8. MAXIMUM RECOMMENDED FENCE WIDTH IS 500 FEET. MAXIMUM TRIBUTARY AREA IS 0.25 ACRE PER 100' OF FENCE. MAXIMUM RECOMMENDED SLOPE LENGTH IS 100'.

		CITY OF BEND	SEDIMENT FENCE DETAIL	STD DWG E-1
				APPR
H			710 NW WALL ST., BEND, OREGON 97701	72/10/21
В	-i	i (QLIIN)	STANDARD DRAWING	DATE 12/10/21
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#### **DITCH INLET**

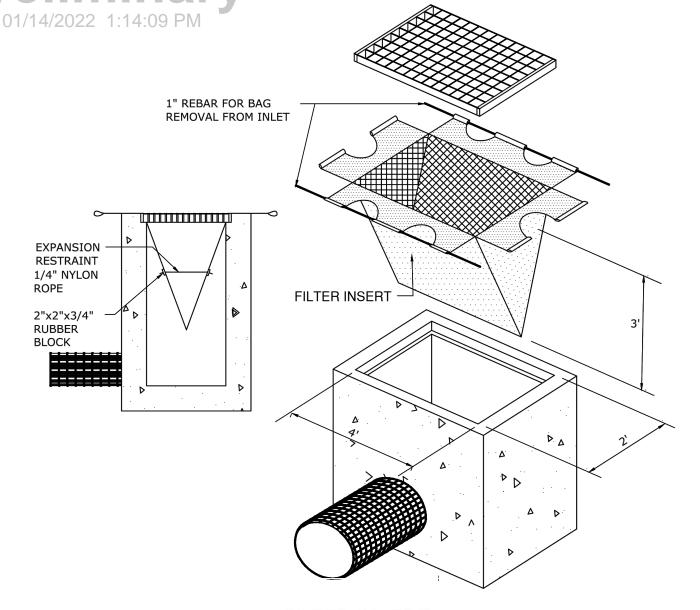


# CURB INLET BIO-BAG INLET PROTECTION

- 1. ADDITIONAL MEASURES MUST BE CONSIDERED DEPENDING ON SOIL TYPES.
- 2. BIO-BAGS SHOULD BE STAKED WHERE APPLICABLE USING (2) 1"X2"X3' WOOD STAKES OR APPROVED EQUAL.
- 3. BIO-FILTER BAGS MUST BE REMOVED AND HAULED OFF-SITE FOR DISPOSAL BY THE CONTRACTOR UPON PROJECT STABILIZATION.
- 4. BIO-FILTER BAGS MAY BE USED SHORT TERM WITH UTILITY WORK AND WITH PHASING OF DEVELOPMENT.
- 5. APPROVED EQUAL SHALL BE USED ON ROADS WITH BIKE LANES
- 6. SEDIMENT BARRIERS SHALL BE MAINTAINED UNTIL UPHILL AREA IS PERMANENTLY STABILIZED.
- 7. AT NO TIME SHALL MORE THAN 2-INCHES OF SEDIMENT BE ALLOWED TO ACCUMULATE BEHIND BIO-FILTER BAGS.
- 8. NEW SEDIMENT BARRIERS SHALL BE INSTALLED AS REQUIRED TO CONTROL SEDIMENT TRANSPORT.

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REV	DATE	(GHID)	STANDARD DRAWING	DATE 12/10/21
		(d)	710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	BIO-FILTER BAG INLET PROTECTION	STD DWG E-2A

<u>Preliminary</u>

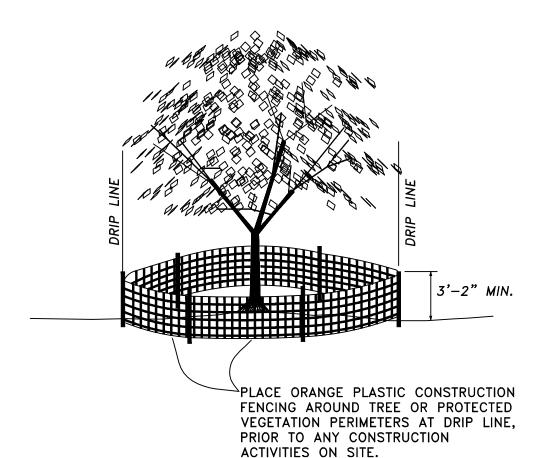


### FILTER INSERT

- INSTALL PRE-FABRICATED FILTER INSERTS ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
- 2. FIELD FABRICATED INSERTS ARE NOT PERMITTED.
- 3. PRE-FABRICATED INSERTS WITH PROVISIONS FOR OVERFLOW ARE ONLY ALLOWED WHEN ACCOMPANIED BY ADDITIONAL BMP TO PREVENT THE POTENTIAL OF SEDIMENTS ENTERING PROJECT STORM SYSTEMS.

 N LJC EROSION	CITY OF BEND	SCALE NTS
 DATE (RIII)	STANDARD DRAWING	DATE 12/1/17
12/1/17	710 NW WALL ST., BEND, OREGON 97701	APPR
CITY OF B	ND FILTER INSERT INLET PROTECTION	STD DWG E-2B

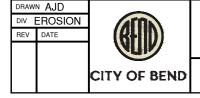
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- USE WOOD OR METAL FENCE POSTS. POST SPACING & DEPTH SHALL BE INSTALLED TO ADEQUATELY SUPPORT THE FENCE IN AN UPRIGHT MANNER.
- 2. MAXIMUM FENCE OPENINGS SHALL BE 2"X2".

DRA	WN LJC EROSION		CITY OF BEND	SCALE NTS
REV	DATE	(&f(ID)	STANDARD DRAWING	DATE 12/1/17
	12/1/17	<b>VLIIV</b>	710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	TREE/VEGETATION PROTECTION FENCING	STD DWG E-3

01/14/2022 1:14:09 PM TOP OF SLOPE 5' MAX. BELOW TOP OF SLOPE 250' MAX. PER WATTI F SPACED EQUALLY 12" MIN. JOINT ALONG SLOPE, VERTICAL SPACING SEE ELEVATION OVERLAP/TYP IS DEPENDANT ON SLOPE. STÁGGER JOINTS TYP. 5'-0" TO 10'-0' 5'-0" ABOVE TOE OF SLOPE 5'-0" FROM TOE OF SLOPE MIN. 10'-0" PREFERRED TOE OF SLOPE SLOPE APPLICATION - PERSPECTIVE VIEW 2"X2" WOODEN STAKE MIN 18" INSTALL WATTLE IN 2-3" - SHALLOW TRENCH COMPACTED EXCAVATED SOIL ON UPSLOPE SIDE. **FLOW** LIMIT OF WORK OR PERIMETER WATTLE 2:1 - 1:1 6:1 - 4:1 4:1 - 2:1 STAKING DETAIL SLOPE APPLICATION - PLAN VIEW



CITY OF BEND

STANDARD DRAWING

710 NW WALL ST., BEND, OREGON 97701

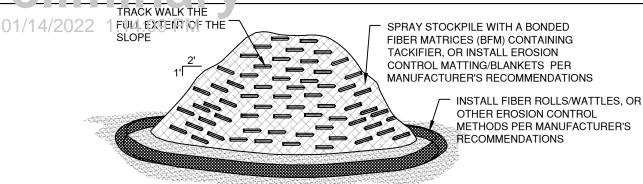
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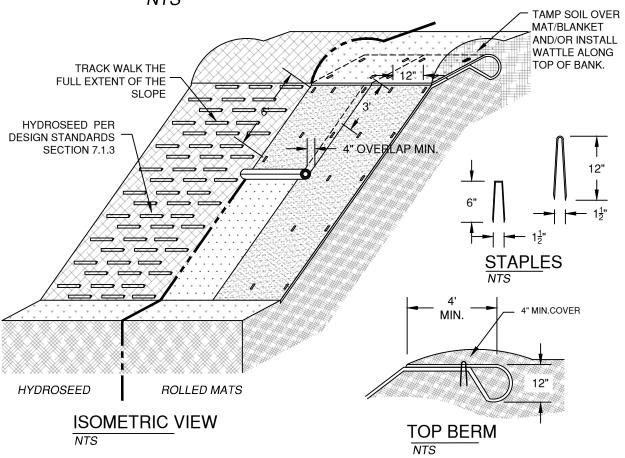
DATE 12/10/21

APPR

STD DWG E-4



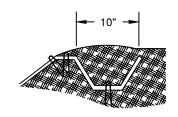
## STOCKPILE STABILIZATION



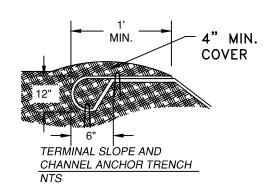
- 1. PRIOR TO A SITE'S FINAL APPROVAL, ALL DISTURBED STEEP SLOPES MUST BE TREATED FOR LONG-TERM EROSION CONTROL. DISTURBED GROUND OF LESSER SLOPES SHALL BE TREATED FOR EROSION CONTROL IF SEDIMENTS HAS THE POTENTIAL TO LEAVE THE SITE.
- 2. MATS/BLANKETS SHOULD BE INSTALLED VERTICALLY DOWN SLOPE.
- 3. SLOPE SURFACE SHALL BE FREE OF ROCKS, AND ORGANIC DEBRIS.
- 4. MATS/BLANKETS SHALL HAVE GOOD SOIL CONTACT.
- 5. APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH
- 6. INSTALL SEDIMENT CONTROLS (I.E. STRAW WATTLES) IN CONJUNCTION WITH EROSION CONTROLS (I.E. ROLLED MATS, OR HYDROSEED) AS REQUIRED TO CONTROL SEDIMENT TRANSPORT.

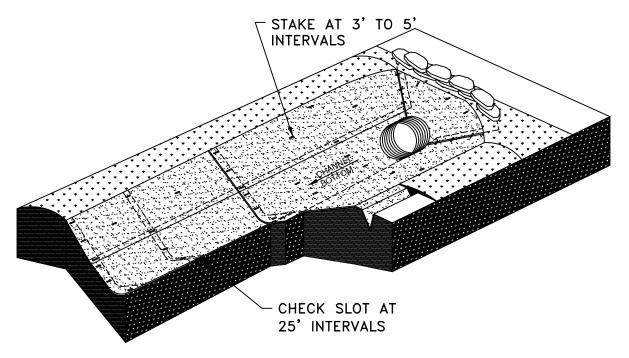
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		<b>VUII</b>	710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	SLOPE / STOCKPILE STABILIZATION	STD DWG E-5

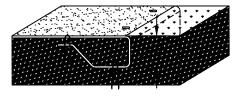
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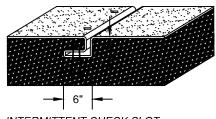
LONGITUDINAL ANCHOR TRENCH NTS







INITIAL ANCHOR TRENCH NTS



## INTERMITTENT CHECK SLOT

#### NOTES:

- NOTES:

  1. CHECK SLOTS TO BE CONSTRUCTED PER MANUFACTURERS RECOMMENDATIONS.

  2. STAKING OR STAPLING LAYOUT PER MANUFACTURES RECOMMENDATIONS.

  3. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.
  MATS/BLANKETS SHALL HAVE GOOD SOIL CONTACT.

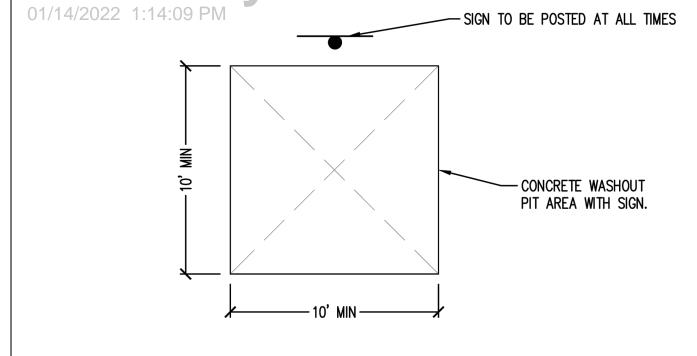
  4. APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS.

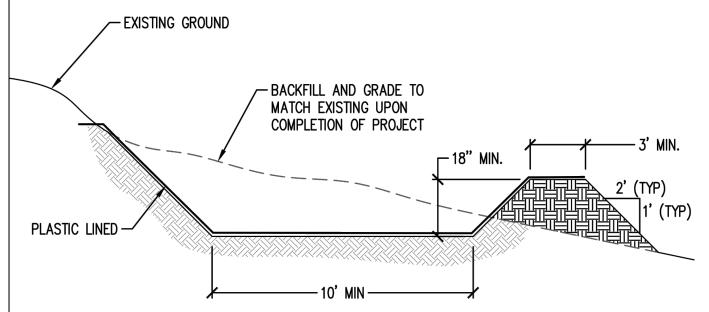
  5. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH.

## CHANNEL STABILIZATION

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R	V DATE		STANDARD DRAWING	DATE 10/01/21
	12/1/17		710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	EROSION BLANKET - CHANNEL INSTALLATION	STD DWG E-6

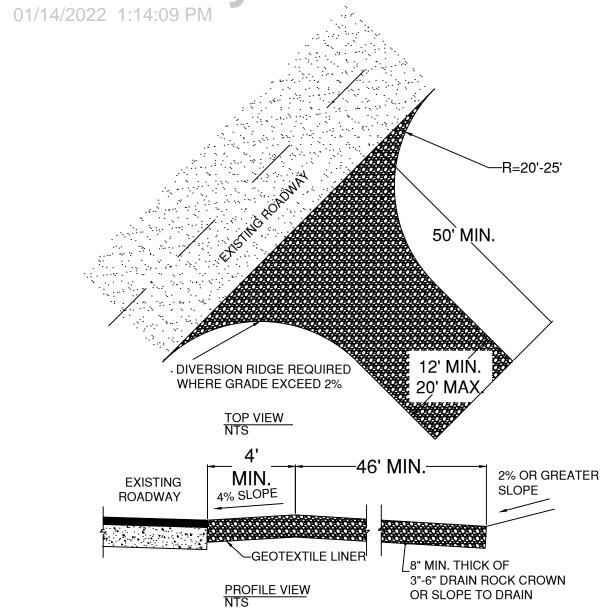
<u>Preliminary</u>





- 1. REMOVE AND LEGALLY DISPOSE OF WASTE MATERIAL WHEN IT ACCUMULATES TO  $\frac{2}{3}$  OF WET STORAGE CAPACITY OF PIT.
- 2. CONCRETE WASHOUT AREA TO BE REPAIRED AND/OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE.
- 3. UPON COMPLETION OF CONSTRUCTION ACTIVITIES REQUIRING CONCRETE WASHOUT, THE WASHOUT SHALL BE REMOVED AND THE AREA RESTORED TO FINISH GRADE AND EXISTING CONDITION.
- 4. CONTRACTOR SHALL TAKE PRECAUTIONS SO AS TO NOT OVERFLOW PIT.

	WN LJC EROSION		CITY OF BEND	SCALE NTS
REV	DATE	(8HID)	STANDARD DRAWING	DATE 12/1/17
		VLIIV	710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	CONCRETE TRUCK WASHOUT	STD DWG E-7



- 1. CONSTRUCTION ENTRANCE TO BE INSTALLED PRIOR TO ANY OTHER WORK ON SITE AND IS APPLICABLE AT ALL POINTS OF INGRESS AND EGRESS UNTIL SITE IS STABILIZED.
- 2. TIRE WASH FACILITY MAY BE REQUIRED ON SITE TO PREVENT TRACKING ONTO EXISTING ROADWAY. IF REQUIRED, CONSTRUCT TIRE WASH FACILITY PER ODOT STD DWG RD1060.
- 3. THE CONSTRUCTION AND USE OF THIS ENTRANCE IN NO WAY NEGATES THE CONTRACTOR'S RESPONSIBILITIES TO PREVENT TRACKING OF MATERIAL ONTO EXISTING ROADWAY.
- 4. MUST BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR DIRECT FLOW OF MUD/SEDIMENT ONTO STREETS. PERIODIC TOP DRESSING WITH STONE AND/OR CLEANOUT OR REPAIR SHALL BE NECESSARY.
- 5. ANY MATERIAL THAT STILL MAKES IT ONTO THE ROAD MUST BE SWEPT UP IMMEDIATELY. WASHING THE STREET IS NOT PERMITTED.

		CITY OF BEND	GRAVEL CONSTRUCTION ENTRANCE	STD DWG E-8
			710 NW WALL ST., BEND, OREGON 97701	APPR
RI	/ DATE		STANDARD DRAWING	DATE 12/10/21
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_	AWN AJD		CITY OF BEND	SCALE NTS



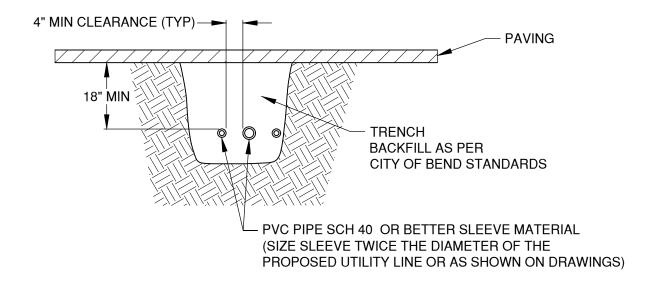
# CITY OF BEND STANDARD DRAWINGS Landscaping (L)

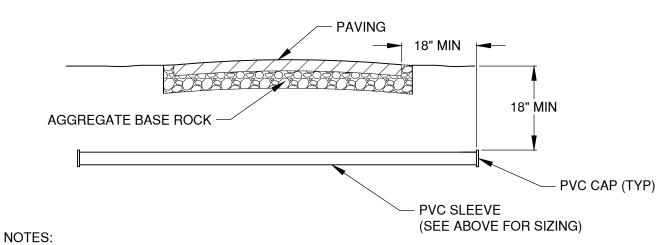
PVC DRIPLINE 1:14:10 PM AIR/VACUUM RELIEF VALVE (PLUMBED TO DRIPLINE AT FEEDER MANIFOLD **EACH HIGH POINT)** (SEE DETAIL THIS SHEET) **LENGTH VARIES LENGTH VARIES** MAX 500' MAX 500' DRIPLINE LATERAL (TYP) 1" DIA PVC (SIZE AS REQUIRED) **AUTO FLUSH** VALVE PLUMBED TO **PVC** 20" (TYP) 20" (TYP) **MANIFOLD** SIZE PER PLANS 1 1/2" DIA (FV **PVC** 1" DIA PVC DRIP CONTROL VALVE **DRIP LINE** WITH FILTER AND PRESSURE REGULATOR (SEE DRW NO L-10) **DRIP LINE ADAPTER** 1/2" FLEXIBLE PVC **PVC REDUCING TEE** - 1" PVC PIPE OR (SIZE PER PLAN) TYPICAL PVC DRIPLINE MANIFOLD CONNECTION NOTES: 1. RELOCATE DRIP LINES AROUND OBSTACLES AS NEEDED

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RE		i (GHID) i	STANDARD DRAWING	DATE 12/1/17
			710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	PLANTING OR TURF BED DRIP LAYOUT	STD DWG L-1

01/14/2022 1:14:10 PM TOP OF HEAD TO BE 1/2"-1" ABOVE -FINISH GRADE IN TURF AREAS ARC ADJUSTMENT FROM THE TOP -FINISH GRADE - ALLOW POP-UP IRRIGATION HEAD: 2" DEPTH FOR BARK 4", 6", 12" HIGH POP-UP MULCH IN SHRUB AREAS SPRAY (TYP) OR POP-UP ROTOR AS SHOWN ON DRAWING TOPSOIL POP-UP SPRAY HEADS: 4", 6", 12" HIGH POP-UP SPRAY (TYP). USE THE FOLLOWING: 18" MIN LENGTH OF FLEXIBLE POLYETHYLENE PIPE TO **CORRESPOND WITH** MANUFACTURER OF HEAD. ALL FITTINGS TO BE BY SAME **MANUFACTURER** SCH 40 PVC STREET ELL POP-UP ROTOR SPRINKLERS USE PVC SCH 80 NIPPLE 10" BARB FITTING AND PVC SCH 40 STREET ELL FOR POP-UP SCH 40 PVC TEE OR SPRAY HEAD **ELL AT LAT LINE** OR PVC SCH 40 STREET ELL FOR POP-UP ROTOR **PVC LATERAL LINE** FROM ZONE VALVE BARB ELL FOR POP-UP SPRAY HEADS PVC SCH 40 STREET ELL FOR POP-UP ROTORS DRAWN LJC CITY OF BEND SCALE NTS DIV LNDSCP STANDARD DRAWING REV DATE DATE 12/1/17 710 NW WALL ST., BEND, OREGON 97701 APPR CITY OF BEND SPRINKLER HEAD AND JOINTS STD DWG L-2

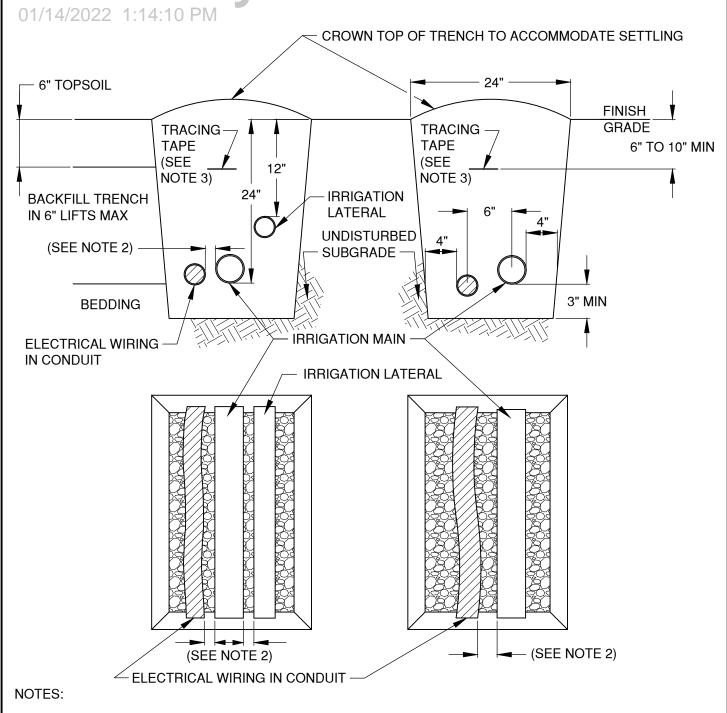
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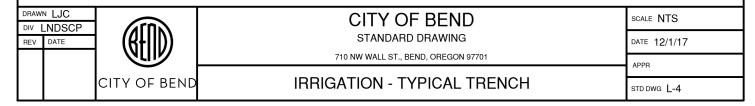
- COMPACTION SHALL MEET 00405.46C PER CITY OF BEND SPECIAL PROVISIONS
   12" MIN COVER UNDER SIDEWALKS
- 3. SEE STD DWGS R-10 AND R-11 FOR TRENCH BACKFILL AND ROAD RESTORATION REQUIREMENTS.

D	AWN AJD  LNDSCP		CITY OF BEND	SCALE NTS
R			STANDARD DRAWING	DATE 12/10/21
		ALIIV	710 NW WALL ST., BEND, OREGON 97701	APPR
L		CITY OF BEND	IRRIGATION SLEEVE UNDER PAVING	STD DWG L-3



- 1. MINIMUM DEPTH OVER PVC PIPE:
  - 10" FOR 1-1/4" OR SMALLER
  - 12" FOR 1-1/2" TO 2" PIPE
  - 14" FOR 2-1/2" TO 3" LATERALS
  - 18" FOR MAINLINE PIPING AND SLEEVES
- 2. CLEARANCE BETWEEN PIPE:
  - 4" FOR PIPE 2" AND SMALLER
  - 6" FOR LARGER PIPE

3. PROVIDE A DETECTABLE TAPE OR WIRE USING A CONTINUOUS MINIMUM 14 GAUGE SINGLE STRAND LOCATOR WIRE IN TRENCH A MINIMUM 6" TO 10" BELOW FINISH GRADE. TRACING TAPE OR WIRE SHALL BE LOCATED A MINIMUM 6" ABOVE PIPING ON MAINLINE INSTALLATIONS



01/14/2022 1:14:10 PM **CROSS ELL** 45° ELL TEE - REBAR LOOP TIE

# NOTES:

1. SUPPLY LINES 3" IN DIAMETER AND LARGER SHALL RECEIVE THRUST BLOCKS

WYE

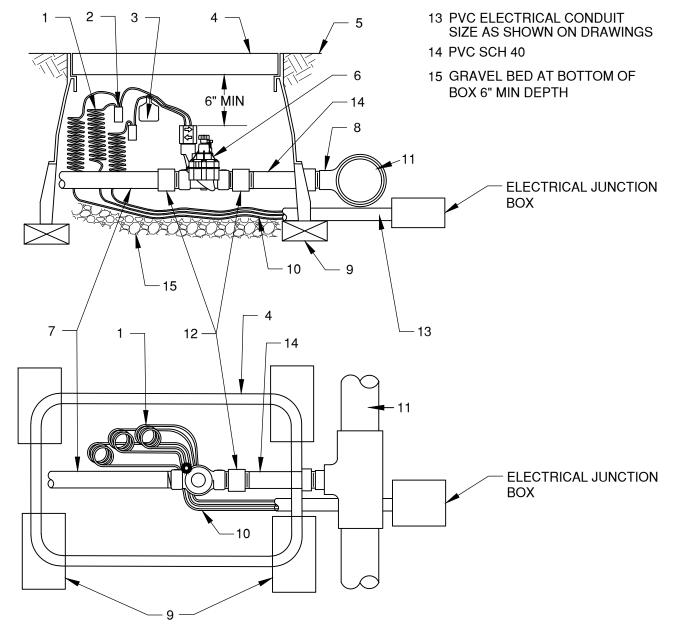
2. USE A MINIMUM 1 CU FT OF CONCRETE IN EACH THRUST BLOCK POUR

		CITY OF BEND	IRRIGATION FITTINGS	STD DWG L-5
				APPR
TILV	DATE	שווש	710 NW WALL ST., BEND, OREGON 97701	DATE 12/1/17
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- 1 30" LINEAR LENGTH OF WIRE, COILED
- 2 WATER PROOF CONNECTION (1 OF 2)
- 3 ID TAG
- 4 VALVE BOX WITH COVER: AMETEK STANDARD OR EQUAL
- 5 FINISH GRADE/TOP OF MULCH ALLOW 2" DEPTH MIN FOR BARK IF LOCATED IN SHRUB BED

- 6 REMOTE CONTROL VALVE: AS SPECIFIED ON DRAWING
- 7 PVC SCHEDULE 40 PIPE
- 8 PVC SADDLE FEMALE THREAD
- 9 TREATED WOOD OR BRICK SUPPORT (LENGTH AS REQ'D.)
- 10 CONTROL WIRING 24 VAC
- 11 PVC MAINLINE PIPE
- 12 SCH 80 MALE ADAPTER



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# CITY OF BEND

STANDARD DRAWING

710 NW WALL ST., BEND, OREGON 97701

IRRIGATION REMOTE CONTROL VALVE

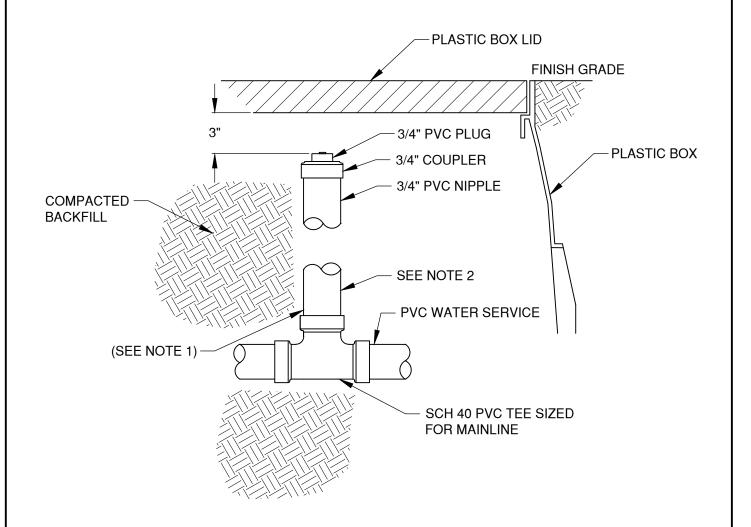
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DATE 12/1/17

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STD DWG L-6

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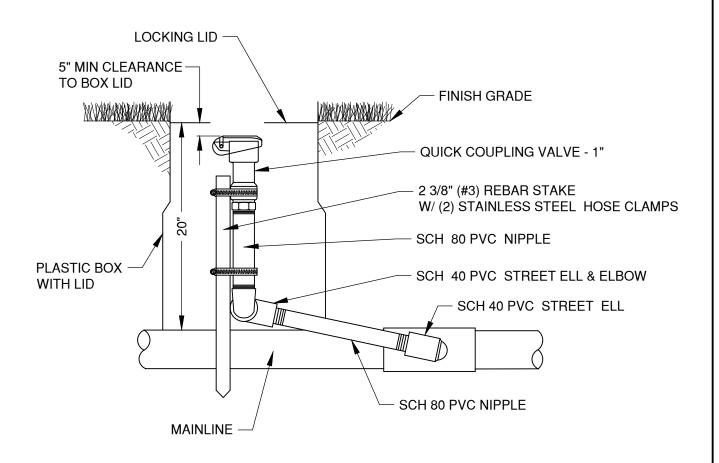
# NOTES:

- 1. PROVIDE PVC BUSHINGS AS REQUIRED TO REDUCE SIZE FROM TEE.
- 2. QUICK COUPLER ASSEMBLY REQUIRED, SEE STD DWG L-9.
- 3. PROVIDE ALL THREADED PVC CONNECTIONS WITH A NON-HARDENING JOINT COMPOUND, COMPATIBLE WITH MANUFACTURERS RECOMMENDATION.

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		CITY OF BEND	IRRIGATION BLOW OUT	7
		O OF BERRA	INNIGATION BLOW OUT	STD DWG L-7

01/14/2022 3" MIN 2" BRASS BALL VALVE STD AMETEK BOX OR EQUAL - 2" GALV NIPPLE THREADED CONNECTION (SEE NOTE 1) **IRRIGATION MAINLINE** (SIZE ACCORDING TO DRAWING) GALV 90 36"x2" GALV NIPPLE -2" SLIP x 2" THREADED PROVIDE REDUCER FROM MAINLINE AS REQ'D PLACE 3 CU FT CONCRETE FOR THRUST BLOCK (SEE DRW NO L-5) NOTES: 1. PROVIDE ALL THREADED CONNECTIONS WITH A NON-HARDENING, JOINT COMPOUND, COMPATIBLE WITH MANUFACTURERS RECOMMENDATION DRAWN LJC CITY OF BEND SCALE NTS DIV LNDSCP STANDARD DRAWING REV DATE DATE 12/1/17 710 NW WALL ST., BEND, OREGON 97701 APPR CITY OF BEND **TERMINATION POINT** STD DWG L-8

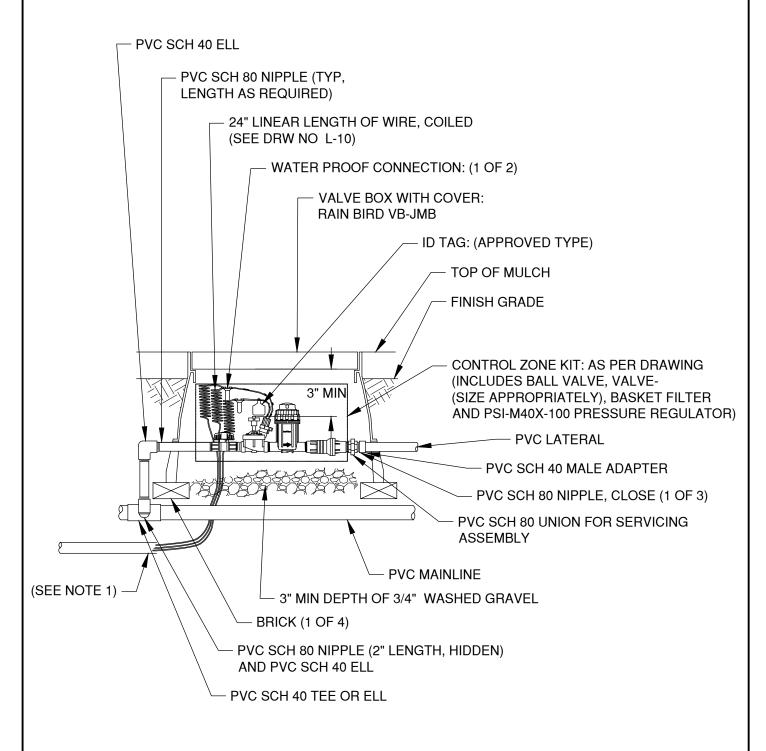
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	RAWN LJC DIV LNDSCP		CITY OF BEND STANDARD DRAWING	SCALE NTS DATE 12/1/17
ľ	BEV DATE		710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	QUICK COUPLING VALVE	STD DWG L-9

01/14/2022 1:14:10 PM PROVIDE CONTROL ZONE KIT FOR LOW FLOW AND MEDIUM FLOW SYSTEMS ACCORDING TO MANUFACTURERS RECOMMENDATION AND AS PER DRAWING PRESSURE REGULATOR IF SPECIFIED **ELECTRIC ZONE VALVE -**(SIZE AS SHOWN ON **ID TAG** - SCH 80 UNION PLANS) (APPROVED TYPE) **BALL VALVE -**- FINISH GRADE - 3" MIN VALVE BOX -20 COIL EXTRA-24" OF WIRE **PVC LATERAL** 4" MIN CLEARANCE LINE PVC -**MAINLINE** ∠ (SEE NOTE 2) **BLOCK OR BRICK FOOTING 1 AT EACH CORNER** 3" DEPTH OF -FILTER W/200 3/4" DIA MESH SCREEN SIZE 1/4"x1/4" GALV WIRE **GRAVEL SUMP** FILTER PER VALVE MESH FOR RODENT CONTROL FLOW REQUIREMENTS (SEE NOTE 1) NOTES: 1. PROVIDE ADEQUATE SPACE FOR SERVICING THE SYSTEM 2. ALL ELECTRICAL WIRE TO BE INSTALLED IN APPROVED CONDUIT DRAWN LJC CITY OF BEND SCALE NTS DIV LNDSCP STANDARD DRAWING REV DATE DATE 12/1/17 710 NW WALL ST., BEND, OREGON 97701 APPR CITY OF BEND DRIP CONTROL VALVE, FILTER, AND REGULATOR STD DWG L-10

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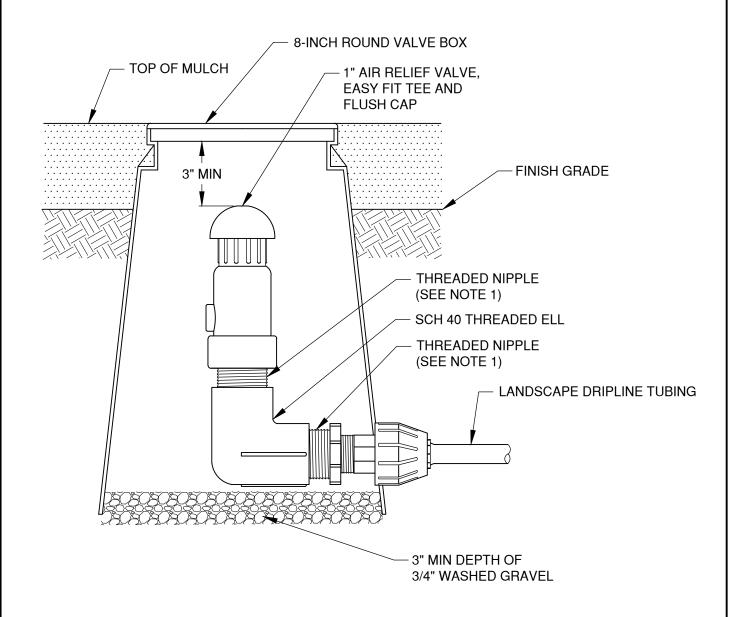


#### NOTES:

1. ALL ELECTRICAL WIRE TO BE INSTALLED IN APPROVED CONDUIT

			CITY OF BEND	1" COMM. CONTROL ZONE KIT WITH BASKET FILTER	STD DWG L-12
				710 NW WALL ST., BEND, OREGON 97701	APPR
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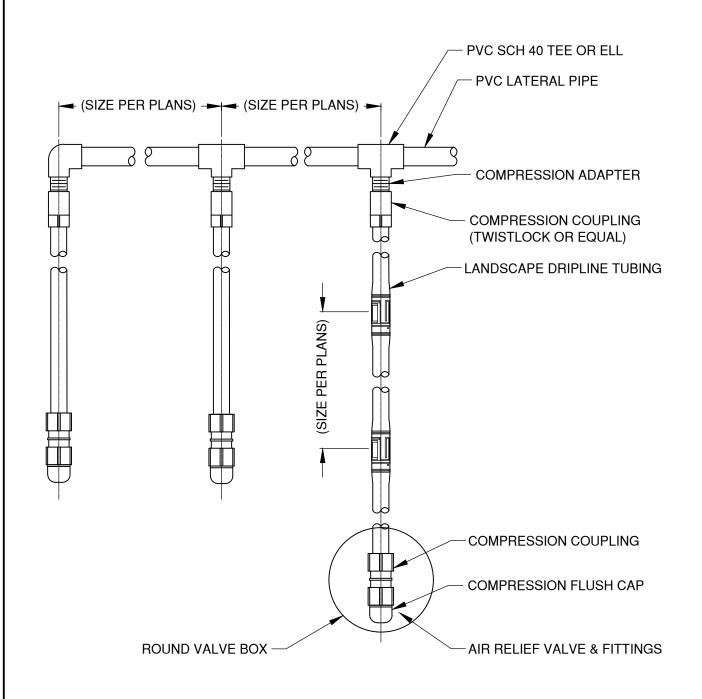


#### NOTES:

1. PROVIDE ALL THREADED CONNECTIONS WITH A NON-HARDENING, JOINT COMPOUND, COMPATIBLE WITH MANUFACTURERS RECOMMENDATIONS

			CITY OF BEND	AIR RELIEF VALVE IN KIT - AR VALVE KIT	STD DWG L-13
				710 NW WALL ST., BEND, OREGON 97701	APPR
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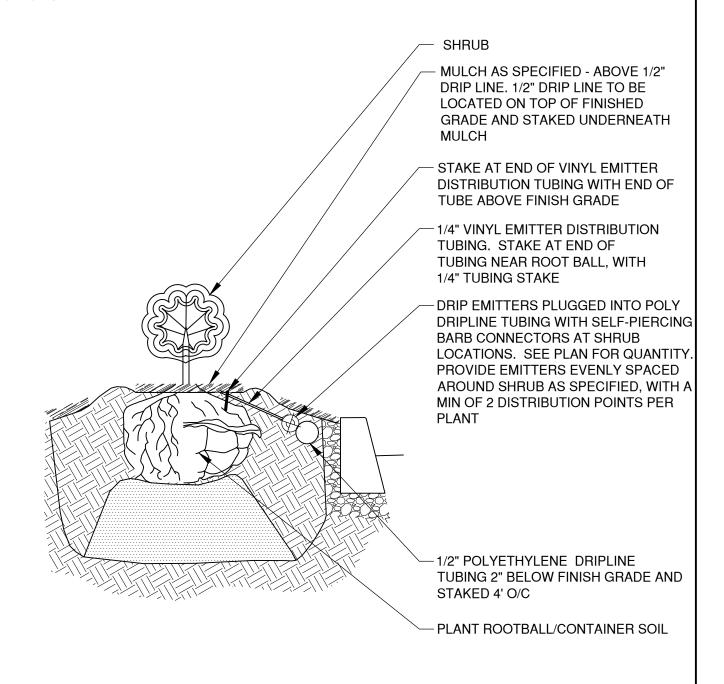


#### NOTES:

- 1. LATERAL AND EMITTER SPACING DEPENDS ON SOIL TYPE, AND PLANT SPECIES.
- 2. SEE OSS DET 6110 PLANTING OR TURF BED DRIP LAYOUT FOR OVERALL SPECIFICATION

DRA	LNDSCP	(CD)	CITY OF BEND	SCALE NTS
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1	12/10/21	WILLIAM	710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	DRIP IRRIGATION MAINLINE LAYOUT	STD DWG L-14

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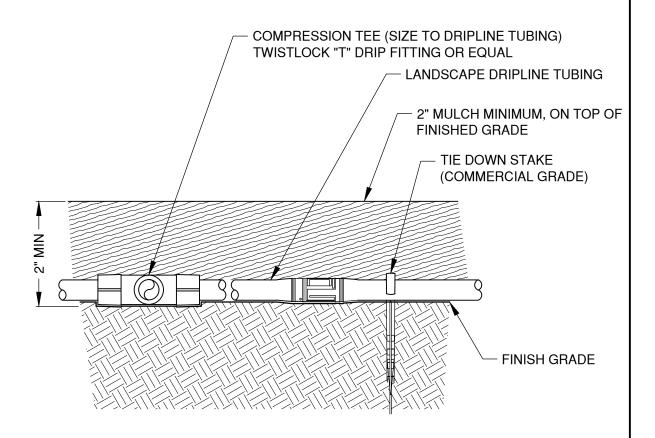


### NOTES:

1. USE MANUFACTURERS RECOMMENDED TOOL TO PERFORATE 1/2" POLYETHYLENE TUBING, FOR BARB CONNECTION POINTS OF ENTRY

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RE	1	STANDARD DRAWING 710 NW WALL ST., BEND, OREGON 97701		DATE 12/10/21
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L		CITY OF BEND	POINT SOURCE DRIP EMITTER	STD DWG L-15

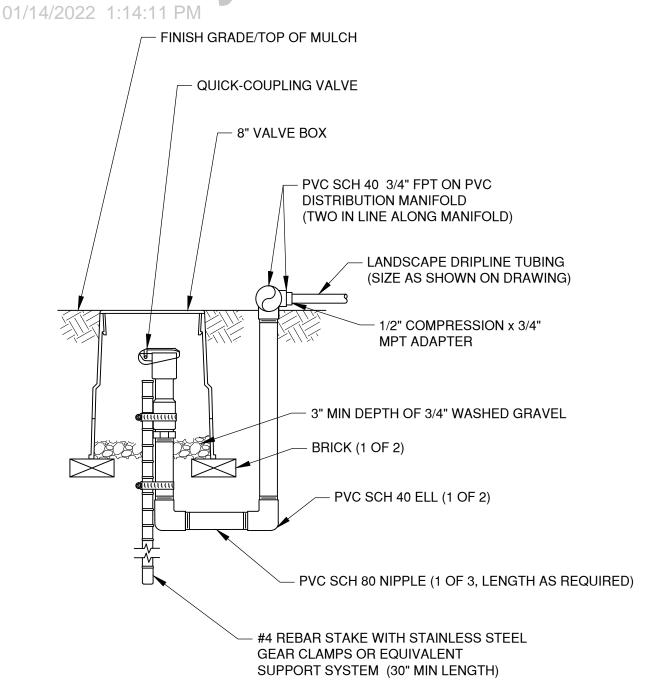
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# NOTES:

1. IF PUTTING LANDSCAPE DRIPLINE UNDER SOIL, DO NOT BURY MORE THAN 2" BELOW GRADE AND INCLUDE AIR RELIEF VALVE (SEE DRW NO L-13 "AIR RELIEF VALVE KIT-AR VALVE KIT")

_	NDSCP	(CD)	CITY OF BEND	SCALE NTS
	DATE		STANDARD DRAWING	DATE 12/10/21
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		CITY OF BEND	DRIPLINE 2" BELOW GRADE POTABLE SYSTEM	STD DWG L-16

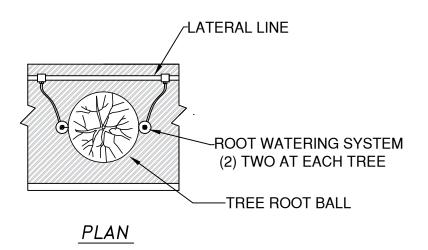


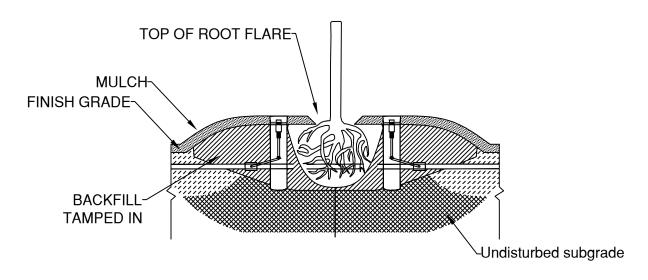
#### NOTES:

1. FURNISH FITTINGS AND PIPING NOMINALLY SIZED IDENTICAL TO NOMINAL QUICK COUPLING VALVE INLET SIZE

DR	LNDSCP	(In)	CITY OF BEND	SCALE NTS
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			710 NW WALL ST., BEND, OREGON 97701	APPR
		CITY OF BEND	LANDSCAPE DRIPLINE FLUSH POINT POTABLE SYSTEM	STD DWG L-17

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SECTION

#### NOTES:

- POSITION UNITS SPACE AROUND ROOT BALL OF TREE
- 2. INSTALL UNITS SO TOP PF RWS (RAIN BIRD RWS-BCG) IS EVEN WITH GROUND SURFACE. LIMIT RWS TO NO DEEPER THAN BOTTON OF ROOT BALL

DIV	LNDSCP DATE	CITY OF BEND STANDARD DRAWING	DATE 12/10/21
		710 NW WALL ST., BEND, OREGON 97701	APPR
	CITY OF BE	TREE ROOT WATERING SYSTEM DETAIL	STD DWG L-18

01/14/2022 1:14:11 PM **APPROVED** STREET TREE (BDC 3.2.400) PEDESTRIAN RATED TREE GRATE OR PERMEABLE PAVER AS DESIGN AND TREE PIT -APPROVED BY CITY. GRATE TO BE 108 CUBIC FEET INSTALLED PER MANUFACTURER'S OF PREPARED SOIL SPECIFICATIONS. **REFER TO 12.2.4** MIN 4'-0" **WIDTH** SIDEWALK STREET MIN 3'-0" ½" SLOTS, TYP 18" DEEP LINEAR ROOT BARRIER. EXTEND 1" ABOVE FINISHED GRADE ACCESSIBLE ROUTE CITY STANDARD SIDEWALK MIN 5' CLEAR AREA 18" OR AS APPROVED 48" MIN 4'-0" 6" CLEAR TREE CENTERED **ALL SIDES** IN LANDSCAPE **STRIP** TREE GRATE - PLAN TREE TRUNK CITY OF BEND STANDARD CURB - $\bigcirc$ - $\bigcirc$ TREE GRATE - PROFILE NOTES: 1. MINIMUM TREE WELL DIMENSIONS DICTATED BY BEND DEVELOPMENT CODE 12.2.4.1. 2. VEGETATION WITHIN THE TREE WELL SHALL HAVE DRIP SYSTEM IRRIGATION INSTALLED PER L-18. 3. TREE GRATE SHALL BE EJ 8954 PLAZA SET. OR APPROVED EQUAL. DRAWN AJD CITY OF BEND SCALE NTS DIV LNDSCP STANDARD DRAWING REV DATE DATE 12/10/21 710 NW WALL ST., BEND, OREGON 97701 APPR CITY OF BEND TREE WELL DETAIL STD DWG L-19